



MINISTRY OF HEALTH

# OPHTHALMOLOGY

STANDARD PRACTICE GUIDELINES FOR  
ASSISTANT MEDICAL OFFICERS IN OPHTHALMOLOGY



CAWANGAN PERKHIDMATAN  
PENOLONG PEGAWAI PERUBATAN





# OPHTHALMOLOGY

**STANDARD PRACTICE GUIDELINES FOR  
ASSISTANT MEDICAL OFFICERS IN OPHTHALMOLOGY**



**CAWANGAN PERKHIDMATAN  
PENOLONG PEGAWAI PERUBATAN**

Printed

e ISBN 978-967-18696-4-2

---

All rights reserved Any Part of this publication may be freely reproduced for individual uses provided the source is fully acknowledged. However, reproduction of this publication in whole part for purpose of resale or redistribution requires permission from the Director General, Ministry of Health Malaysia.

---

Printed 2024

Edited and reprinted :

**Published by Assistant Medical Officers Services**

**Section Medical Practice Division**

Level 6, Block E1, Parcel E Government Complex,

Federal Government Administrative Centre, 62590 Putrajaya

Tel: +603-8883 1370

Fax: +603-88883 1490

Printed by :

Merah Print & Supply Sdn. Bhd.

No. 20 & 20A, Jalan 4/12A, Seksyen 4 Tambahan,  
43950 Bandar Baru Bangi, Selangor Darul Ehsan.

Tel: +603-8922 3140

Fax: +603-8912 2770

Email: merahprint.supply@yahoo.com

## FORWARD MESSAGE



Bismillahirrahmanirrahim,  
Assalamualaikum warahmatullahi wabarakatuh,

On behalf of the Ministry of Health Malaysia, I extend my heartfelt congratulations to Cawangan Perkhidmatan Penolong Pegawai Perubatan (CPPPP) and all committee members for the successful production of the book “Standard Practice Guidelines For AMO’S In Ophthalmology.” Alhamdulillah, this accomplishment is a testament to your dedication and commitment to advancing the knowledge and skills of Assistant Medical Officers (AMO) in the Discipline of Ophthalmology. The publication of these standard practice guidelines is a significant milestone that will undoubtedly contribute to the enhancement of healthcare services in this specialized field.

I commend the efforts of all Assistant Medical Officers and encourage them to actively participate in the creation of educational

materials that benefit the medical community. Your collective contributions play a crucial role in fostering continuous learning and improvement within the healthcare sector. May Allah SWT reward all involved in this noble effort, and may the book serve as a valuable resource for AMOs, aiding them in providing optimal care and adhering to the designated procedures in Ophthalmology.

SELAMAT MAJU JAYA! May your future endeavors continue to be blessed with success and positive impact on healthcare delivery in Malaysia.

**DATUK DR MUHAMMAD RADZI  
BIN ABU HASSAN**

Director General Of Health Malaysia

## FORWARD MESSAGE



Bismillahirrahmanirrahim,  
Assalamualaikum warahmatullahi wabarakatuh,

Alhamdulillah, I extend my sincerest appreciation and gratitude to Cawangan Perkhidmatan Penolong Pegawai Perubatan (CPPPP) for the remarkable achievement of successfully publishing this highly comprehensive book within the designated timeframe. This accomplishment is truly commendable and marks a significant milestone that will serve as a valuable guide for all members of the Assistant Medical Officers (AMO) profession. The timely publication of such a comprehensive guide is a testament to the dedication, hard work, and organizational skills of the CPPPP team. This book is poised to be an invaluable resource, providing essential guidance to Assistant Medical Officers in the field of Ophthalmology. It reflects a commitment to enhancing knowledge, skills, and professional practices within the AMO community. I express my deepest gratitude to all those involved in bringing forth this valuable contribution to the medical field. May this comprehensive guide facilitate continuous improvement in healthcare practices and contribute to the elevation of standards within the AMO profession.

Emphasizing safety and the quality of procedures is crucial, and your recognition

of this highlights the commitment to ensuring the well-being of patients. By adhering to the guidelines outlined in the book, Assistant Medical Officers (AMO) can contribute to the reduction of complications, promoting a safer healthcare environment. Your acknowledgment that this guideline book is a basic guide underscores the importance of continuous improvement. Indeed, healthcare practices evolve, and regular updates will ensure that the guidelines remain aligned with the best standards and practices in the field of Ophthalmology. I share your hope that this guideline book will be widely followed and used as a reference by all AMOs, thereby contributing to the maintenance of service quality and patient safety. May the commitment to excellence and continuous improvement lead to even better publications in the future. Thank you for your thoughtful message, and may your efforts in healthcare be blessed with success and positive outcomes.

A handwritten signature in black ink, appearing to read 'MOHAMED IQBAL BIN HAMZAH'.

**DR. MOHAMED IQBAL BIN HAMZAH**  
Director Medical Practice Division

## FORWARD MESSAGE



Assalamualaikum w.b.t dan Salam Sejahtera,

Alhamdulillah, it is truly a moment of gratitude that Cawangan Perkhidmatan Penolong Pegawai Perubatan (CPPPP) and all committee members have successfully produced the “Standard Practice Guidelines (SPG) For AMO’S In Ophthalmology.” This achievement reflects a collective effort and dedication to advancing the standards of care within the profession of Assistant Medical Officers (AMO) in the Ministry of Health Malaysia. The establishment of this SPG book is a significant step towards standardizing ophthalmology procedures and services. It serves as a comprehensive guide, drawing upon the insights and contributions of various experienced parties involved in its documentation.

The collaborative effort in shaping this guideline book is commendable and speaks to the commitment to excellence within the healthcare community. By following the guidelines outlined in the SPG, AMOs can contribute to the advancement of the profession and, most importantly, provide optimal care

to the community. Standardized practices not only enhance the efficiency and effectiveness of healthcare services but also contribute to patient safety and satisfaction. May the contributions from Cawangan Perkhidmatan Penolong Pegawai Perubatan lead to further enhancements in the quality of healthcare services.

Thank you for your dedication and commitment to the advancement of healthcare practices.

**DR MOHD AZIZ BIN HUSNI**

Head of Speciality Ophthalmology  
Ministry of Health

## FORWARD MESSAGE



Assalamualaikum w.b.t dan Salam Sejahtera,

Alhamdulillah, praise be to Allah S.W.T for the successful completion of this important book within the designated timeframe. This accomplishment marks a significant contribution to the field of Ophthalmology Discipline, serving as an introduction for Assistant Medical Officers (AMOs). On behalf of the AMO profession, I express my heartfelt happiness and gratitude to the Committee members responsible for producing this invaluable guideline book. The collaborative effort of experienced Ophthalmology Specialists and AMOs in crafting this book is commendable. I acknowledge the challenges and obstacles faced during the preparation, and I appreciate the dedication that went into creating a comprehensive resource for the discipline of Ophthalmology.

The guidelines outlined in this book fill a crucial gap, providing specific, organized, and detailed instructions for AMOs in the performance of

important procedures. This level of guidance is invaluable for the enhancement of service delivery and the standardization of practices within the field of Ophthalmology. I extend my deepest appreciation and gratitude to the committee members for their initiative and dedication for supporting the AMO profession. Your efforts are integral to the continuous improvement of healthcare practices. May the utilization of these guidelines contribute to the improvement and maintenance of the quality of Ophthalmology discipline service practices by AMOs. Your commitment to excellence is truly commendable.

Thank you for your invaluable contribution to the advancement of healthcare practices.

**ZULHELMI BIN ABDULLAH**

Head of Assistant Medical Officer Malaysia



## ACKNOWLEDGEMENT

---

### ADVISOR

**YBhg. Datuk Dr. Nor Fariza binti Ngah**

Timbalan Ketua Pengarah Kesihatan (Penyelidikan & Sokongan Teknikal)  
Kementerian Kesihatan Malaysia

**Dr. Mohd Aziz bin Husni**

Ketua Kepekaran Oftalmologi, Kementerian Kesihatan Malaysia  
Ketua Jabatan Oftalmologi  
Hospital Tengku Ampuan Afzan, Kuantan, Pahang

**Toh Puan Dr. Maizan binti Yaakub**

Ketua Jabatan Oftalmologi  
Hospital Sultanah Nur Zahirah, Kuala Terengganu, Terengganu

**Dr. Azreen Redzal bin Anuar**

Ketua Jabatan Oftalmologi  
Hospital Sultanah Bahiyah, Alor Setar, Kedah

**En. Zulhelmi bin Abdullah**

Ketua Penolong Pegawai Perubatan Malaysia  
Cawangan Perkhidmatan Penolong Pegawai Perubatan  
Kementerian Kesihatan Malaysia

---

### COORDINATOR

**En. Alias bin Abu Hassan**

Ketua Sektor Dasar dan Perancangan Strategik  
Cawangan Perkhidmatan Penolong Pegawai Perubatan  
Kementerian Kesihatan Malaysia

**En. Shaiful Bahari bin Muhammad Shah**

Penolong Pegawai Perubatan  
Sektor Dasar dan Perancangan Strategik  
Cawangan Perkhidmatan Penolong Pegawai Perubatan  
Kementerian Kesihatan Malaysia

**YM Engku Mohd Nazri bin Engku Mansor**

Penolong Pegawai Perubatan  
Sektor Dasar dan Perancangan Strategik  
Cawangan Perkhidmatan Penolong Pegawai Perubatan  
Kementerian Kesihatan Malaysia

---

### CHAIRMAN

**En. Mohd Zawawi bin Zakaria**

Penolong Pegawai Perubatan  
Jabatan Oftalmologi  
Hospital Selayang

**COMMITTEE  
MEMBERS****En. Mohammad Fauzi bin Shamsuddin**

Penolong Pegawai Perubatan  
Cawangan Perkhidmatan Penolong Pegawai Perubatan  
Kementerian Kesihatan Malaysia

**En. Noorhaslan bin Mohammad**

Penolong Pegawai Perubatan  
Jabatan Oftalmologi  
Hospital Putrajaya

**En. Nik Azman bin Nik Mohamad**

Penolong Pegawai Perubatan  
Jabatan Oftalmologi  
Hospital Raja Perempuan Zainab II

**En. Romaidi Fitri bin Zainol**

Penolong Pegawai Perubatan  
Jabatan Oftalmologi  
Hospital Kuala Lumpur

**En. Ilmy bin Hassan**

Penolong Pegawai Perubatan  
Jabatan Oftalmologi  
Hospital Kuala Lumpur

**En. Mohd Radzuan bin Tahir**

Penolong Pegawai Perubatan  
Jabatan Oftalmologi  
Hospital Ampang

**En. Muhammad Fareed bin Muhd Yusof**

Penolong Pegawai Perubatan  
Jabatan Oftalmologi  
Hospital Sultanah Nur Zahirah

**En. Mohd Adib bin Mohad Zainudin**

Penolong Pegawai Perubatan  
Jabatan Oftalmologi  
Hospital Shah Alam

**En. Norasarudin bin Kurmin**

Penolong Pegawai Perubatan  
Jabatan Oftalmologi  
Hospital Tengku Ampuan Rahimah

**En. Mohd Zhafran bin Mohd Rosli**

Penolong Pegawai Perubatan  
Jabatan Oftalmologi  
Hospital Tuanku Jaafar

**En. Jeevindran A/L Valaiyuthan**

Penolong Pegawai Perubatan  
Jabatan Oftalmologi  
Hospital Tengku Ampuan Afzan

**En. Abd Hamid bin Ahmad**

Penolong Pegawai Perubatan  
Jabatan Oftalmologi  
Hospital Sultanah Nur Zahirah

**En. Muhammad Afiq bin Zaki**

Penolong Pegawai Perubatan  
Jabatan Oftalmologi  
Hospital Sultanah Nur Zahirah

**Pn. Siti Nurfarahiyah binti Saimi**

Penolong Pegawai Perubatan  
Jabatan Oftalmologi  
Hospital Sungai Buloh

---

|  |        |
|--|--------|
| Preface Director General of Health                 | iii    |
| Preface Director Medical Practice Division         | iv     |
| Preface National Head of Ophthalmology Services    | v      |
| Preface Head of Assistant Medical Officer Malaysia | v      |
| Acknowledgement                                    | vii-ix |
| Table of Content                                   | x-xii  |
| List of Appendices                                 | xiii   |

### Section A - Clinic Procedure

|    |   |    |
|----|---|----|
| 1  | Triaging and History Taking   | 1  |
| 2  | Distant Vision Assessment   | 4  |
| 3  | Near Vision   | 8  |
| 4  | Color Vision Test   | 11 |
| 5  | Intraocular Pressure (IOP) Measurement Using Handheld Tonometer                             | 14 |
| 6  | IOP Measurement Using Non-Contact Tonometry (Air Puff Tonometer)                            | 17 |
| 7  | Relative Afferent Pupillary Defect (RAPD) Test  | 20 |
| 8  | Instillation of Eye Drops / Application of Eye Ointment                                     | 23 |
| 9  | Direct Ophthalmoscopy   | 28 |
| 10 | Schimer's Test  | 33 |
| 11 | PH Testing  | 36 |
| 12 | Fluorescein Eye Staining Test   | 39 |
| 13 | Eye Irrigation  | 42 |
| 14 | First Eye Dressing  | 46 |
| 15 | Suture To Open (STO) Eyelid   | 50 |
| 16 | Application Of Eye Pad and Eye Shield   | 53 |
| 17 | Colour Fundus Retina Photography  | 56 |
| 18 | Optical Coherence Tomography (OCT), Optical Coherence Tomography Angiography (OCTA) Imaging | 60 |



|    |   |     |
|----|---|-----|
| 19 | Indocyanine Green Angiography (ICGA)          | 65  |
| 20 | Fundus Fluorescein Angiography (FFA)          | 70  |
| 21 | Insertion, Removal and Care of Eye Prosthesis | 77  |
| 22 | Pre-Operative Counselling                     | 81  |
| 23 | Transscleral Cyclophotocoagulation (TSCPC)    | 87  |
| 24 | Laser Treatment                               | 91  |
| 25 | Epilation of Eye Lashes                       | 95  |
| 26 | Syringing of Lacrimal Passages                | 99  |
| 27 | Eye Rodding and Removal of Pseudo-Membrane    | 104 |
| 28 | Toilet And Suturing of Eyelid Laceration      | 108 |
| 29 | Cornea Foreign Body Removal                   | 112 |
| 30 | Corneal Suture Removal (STO Cornea)           | 116 |

### **Section B - Clinic Minor OT Procedures**

|    |   |     |
|----|---|-----|
| 31 | Subconjunctiva Injection                  | 119 |
| 32 | Subtenon Injection                        | 123 |
| 33 | Intravitreal Injections                   | 129 |
| 34 | Intracameral Injection                    | 136 |
| 35 | Incision And Curettage (I&C) Of Chalazion | 141 |
| 36 | Cornea Gluing                             | 145 |
| 37 | Cornea Scrapping                          | 150 |
| 38 | Tarsorrhaphy                              | 154 |

### **Section C – Operation Room Procedures (Assisting in Ophthalmic Surgeries)**

|    |   |     |
|----|---|-----|
| 39 | Cleaning And Sterilization of Microsurgical Instruments | 158 |
| 40 | Examination Under Anesthesia                            | 162 |
| 41 | Aqueous Tap / Paracentesis                              | 166 |



|    |   |     |
|----|---|-----|
| 42 | Pterygium Excision  | 170 |
| 43 | Phacoemulsification With Intraocular Lens (IOL) Implantation  | 175 |
| 44 | Extra Capsular Cataract Extraction (ECCE) Or Lens Aspiration  | 181 |
| 45 | Intra Capsular Cataract Extraction (ICCE)                     | 187 |
| 46 | Eyelid Surgery  | 193 |
| 47 | Syringing and Probing   | 198 |
| 48 | Donor Eye Procurement and Processing                          | 202 |
| 49 | Amniotic Membrane Transplantation (AMT)                       | 210 |
| 50 | Descemet Stripping Automated Endothelial Keratoplasty (DSAEK) | 215 |
| 51 | Penetrating Keratoplasty Surgery                              | 221 |
| 52 | Dacryocystorhinostomy Surgery                                 | 228 |
| 53 | Orbitotomy Surgery  | 233 |
| 54 | Strabismus Surgery  | 238 |
| 55 | Augmented Trabeculectomy                                      | 244 |
| 56 | Vitreous Biopsy   | 250 |
| 57 | Cyoretinopexy   | 254 |
| 58 | Sclera Buckling   | 258 |
| 59 | Vitrectomy  | 263 |
| 60 | Intra Ocular Gas Injection                                    | 269 |
| 61 | Removal Of Silicone Oil                                       | 273 |
| 62 | Evisceration Surgery  | 277 |
| 63 | Enucleation Surgery   | 281 |

|                   |            |
|-------------------|------------|
| <b>Appendices</b> | <b>285</b> |
|-------------------|------------|

 **LIST OF APPENDICES**

|             |   |
|-------------|---|
| Appendix 1  | Toilet and Suturing (T&S) Set                                 |
| Appendix 2  | Incision and curettage (I&C) Set                              |
| Appendix 3  | Pterygium Set   |
| Appendix 4  | Cataract Set (Phacoemulsification)                            |
| Appendix 5  | Extra Capsular Cataract Extraction (ECCE) Set                 |
| Appendix 6  | Intracapsular Cataract Extraction (ICCE) Set.                 |
| Appendix 7  | Lid Set   |
| Appendix 8  | Descemet Stripping Automated Endothelial Keratoplasty (DSAEK) |
| Appendix 9  | Penetrating Keratoplasty (PK) Set                             |
| Appendix 10 | Dacryocystorhinostomy (DCR) Set                               |
| Appendix 11 | Orbitotomy Set  |
| Appendix 12 | Strabismus Set  |
| Appendix 13 | Trabeculectomy Set  |
| Appendix 14 | Vitrectomy Set  |
| Appendix 15 | Evisceration Set / Enucleation Set                            |

## Section A - Clinic Procedure

**TRIAGING AND HISTORY TAKING**

|                           |  |
|---------------------------|--|
| <b>INTRODUCTION</b>       | <p>Triaging is a process for sorting ocular problem into groups based on their need for or likely from immediate medical treatment. It is also ensured that patients are treated according to their clinical urgency</p> <p>Simple history taking involves asking appropriate questions of patients or their relatives to obtain information to aid diagnosis.</p>   |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be performed by a privileged Assistant Medical Officer (AMO).</li> <li>• All patient attending the clinic with new referral letter.</li> </ul>   |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• To obtain information to aid diagnosis</li> <li>• To identify care priorities and plan care</li> <li>• To focus examination and indicate what investigations are needed.</li> </ul>   |
| <b>WORKFLOW</b>           | <pre> graph TD     Start([Start]) --&gt; Receive[Receive patient]     Receive --&gt; Assess[Assess/verify patient]     Assess --&gt; Equip[Prepare equipment]     Equip --&gt; Prep[Prepare patient]     Prep --&gt; Perform[Perform the procedure]     Perform --&gt; Emergency{Ocular emergency?}     Emergency -- Yes --&gt; Refer[Refer to Doctor]     Emergency -- No --&gt; Appointment[Appointment date]     Appointment --&gt; Documentation[Documentation]     Refer --&gt; Documentation     Documentation --&gt; End([End task])   </pre> |

| WORK INSTRUCTION                       |  |   |   |
|--|--|---|---|
| ACTIVITY                               | WORK PROCESS   | STANDARD  | REQUIREMENT   |
| Receive Patient                        | <ul style="list-style-type: none"> <li>Register patient particulars in record book</li> </ul>  | Malaysian Patient Safety Goal 2.0                               | <ul style="list-style-type: none"> <li>Patient appointment card / record</li> <li>Referral letter.</li> <li>Record book / census</li> </ul> |
| Assess / Verify Patient / Correct Site | <ul style="list-style-type: none"> <li>Verify correct patient.</li> <li>Verify correct site.</li> <li>Verify correct procedure.</li> </ul>   | <i>Manual Arahan Kerja</i><br>Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>Patient appointment card / record</li> </ul>   |
| Prepare Equipment                      | <ul style="list-style-type: none"> <li>Prepare the equipment</li> </ul>  | <i>Manual Arahan Kerja</i>                                      | <ul style="list-style-type: none"> <li>Torch light</li> </ul>   |
| Prepare Patient                        | <ul style="list-style-type: none"> <li>Respect the patient privacy and confidentiality while taking the history taking</li> </ul>  | <i>Manual Arahan Kerja</i>                                      |   |
| Perform the Procedure                  | <ul style="list-style-type: none"> <li>Ask patient permission to start.</li> </ul> <p><u>Steps Performed</u></p> <ol style="list-style-type: none"> <li>Identify presenting problem/Referral letter.</li> <li>Ask patient question relating to previous ocular history.</li> <li>Ask patient questions relating to his/her general health.</li> <li>Ask patient question relating to his/her social history</li> </ol> | <i>Manual Arahan Kerja</i>                                      |   |

|                   |   |                            |  |
|-------------------|---|----------------------------|--|
| Documentation     | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>  | <i>Manual Arahan kerja</i> | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> </ul> |
| Ocular Emergency? | <ul style="list-style-type: none"> <li>• If yes: Refer to Doctor</li> <li>• If no: Provide appointment</li> </ul> | <i>Manual Arahan kerja</i> | <ul style="list-style-type: none"> <li>• Appointment book/card</li> </ul>    |

## REFERENCES

- Fawcett T, & Rhynas S. (2012). *Taking a patient history: The role of the nurse. Nursing Standard* (pp. 26, 24, 41–46) [Review of *Taking a patient history: The role of the nurse. Nursing Standard*]. RCN Publishing.
- Takusewanya, M. (2019). How to take a complete eye history [Review of *How to take a complete eye history*]. *Community eye health journal*, volume 32(number 107), 44–45
- Tam, H. L., Chung, S. F., & Lou, C. K. (2018). A review of triage accuracy and future direction. *BMC Emergency Medicine*, 18(1). <https://doi.org/10.1186/s12873-018-0215-0>

| DISTANT VISION ASSESSMENT |   |
|---------------------------|---|
| <b>INTRODUCTION</b>       | Visual acuity (VA) is a measure of the ability of the eye to distinguish shapes and the details of objects at a given distance. One eye is tested at a time   |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be performed by a privileged Assistant Medical Officer (AMO)</li> <li>• All patient attending eye clinic</li> </ul>   |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• To provide a baseline recording of visual acuity (VA)</li> <li>• To assess VA in a consistent way to detect any changes in vision</li> <li>• To gain an indication of any improvement post-surgery or the patient's previous visit</li> </ul>  |
| <b>WORKFLOW</b>           | <pre> graph TD     Start([Start]) --&gt; Receive[Receive patient]     Receive --&gt; Assess[Assess/verify patient]     Assess --&gt; Fit{Fit For Procedure}     Fit -- No --&gt; Refer[Refer to Doctor]     Fit -- Yes --&gt; Equip[Prepare equipment]     Equip --&gt; Patient[Prepare patient]     Patient --&gt; Perform[Perform the procedure]     Perform --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End   </pre> |

| <b>WORK INSTRUCTION</b>                |  |   |   |
|--|--|---|---|
| <b>ACTIVITY</b>                        | <b>WORK PROCESS</b>  | <b>STANDARD</b>   | <b>REQUIREMENT</b>  |
| Receive Patient                        | <ul style="list-style-type: none"> <li>• Register patient particulars in record book</li> </ul>  | Malaysian Patient Safety Goal 2.0                                   | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Referral letter.</li> <li>• Record book / census</li> </ul>                                       |
| Assess / Verify Patient / Correct Site | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Verify correct site.</li> <li>• Verify correct procedure.</li> </ul>   | <i>Manual Arahan Kerja</i><br><br>Malaysian Patient Safety Goal 2.0 |   |
| Prepare Equipment                      | <ul style="list-style-type: none"> <li>• Prepare the instrument such as occluder and visual acuity chart is ready to use.</li> </ul>   | <i>Manual Arahan Kerja</i>  | <ul style="list-style-type: none"> <li>• Occluder</li> <li>• Vision chart / Projector chart / Snellen</li> <li>• Sheridan Gardiner (toddler)</li> <li>• E Chart (illiterate)</li> </ul> |
| Prepare Patient                        | <ul style="list-style-type: none"> <li>• Inform the patient about the procedure.</li> <li>• Ensure that the patient can recognize letters, numbers, or pictures before you administer the test</li> <li>• Enquire whether patient is using contact lens/ glasses/eye prosthesis</li> </ul> | <i>Manual Arahan Kerja</i>  |   |
| Perform the Procedure                  | <ul style="list-style-type: none"> <li>• Ask patient permission to start.</li> <li>• Sit the patient at appropriate distance from the visual acuity chart</li> </ul>   | <i>Manual Arahan Kerja</i>  |   |

|  |   |  |  |
|--|---|--|--|
|  | <p><u>Steps Performed</u></p> <ol style="list-style-type: none"><li>1) Ensure the patient place the occluder at the right eye (OD) correctly</li><li>2) Record the lowest line the patient was able to read</li><li>3) Perform the pinhole test if the visual acuity is 6/9 or worse, then record the findings</li><li>4) If patient unable to read at 6 meters, move the patient closer to the Snellen chart, reduce 1 meter at the time until the patient is able to recognize the largest optotype. Record the visual acuity</li><li>5) If the largest optotype cannot be read at 1 meter (1/60), hold up your fingers and check where the patient can count them. Record the distance that the patient was able to correctly count the number of fingers that you were holding. CF2' Means that the patient could count fingers at 2 feet.</li><li>6) If the patient cannot count fingers, wave your hand in front the eye and check if the patient can see the movement.</li></ol> |  |  |
|--|---|--|--|

|               |   |  |  |
|---------------|---|--|--|
|               | <p>Record as HM (hand movement)</p> <p>7) If the patient cannot see the movement of your hand, then shine a light in the eye of patient. If the patient sees the light, record it as 'PL' (perception of light). If the patient can't see the light, record it as 'NPL' (No Perception of Light).</p> <p>8) Repeat the above steps to the left eye (OS)</p> |  |  |
| Documentation | <ul style="list-style-type: none"> <li>Record procedure</li> </ul>  |  | <ul style="list-style-type: none"> <li>Procedure book / census.</li> </ul> |

#### REFERENCE

Marsden, J., Stevens, S., & Ebri, A. (2014). How to measure distance visual acuity. *Community Eye Health*, 27(85), 16.  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4069781/>

*Visual Acuity: Meaning, Tests & Scores Explained.* (2022). MyVision.org.  
<https://myvision.org/eyesight/visual-acuity-score/>

Daiber, H. F., & Gnugnoli, D. M. (2021). *Visual Acuity*. PubMed; StatPearls Publishing.  
<https://www.ncbi.nlm.nih.gov/books/NBK563298/>

| NEAR VISION               |   |
|---------------------------|---|
| <b>INTRODUCTION</b>       | Near vision is measured using a small handheld chart that has paragraphs of text that is smallest at the top and largest at the bottom.   |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be performed by a privileged Assistant Medical Officer (AMO)</li> <li>• All patient attending diabetic retinopathy clinic.</li> <li>• All patient attending Medical Retina and uveitis clinic.</li> <li>• All patient attending post-operative cataract clinic.</li> </ul>  |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• To detect near sighted problem (presbyopia, hypermetropia and macula abnormality)</li> </ul>   |
| <b>WORKFLOW</b>           | <pre> graph TD     Start([Start]) --&gt; Receive[Receive patient]     Receive --&gt; Assess[Assess/verify patient]     Assess --&gt; Fit{Fit For Procedure}     Fit -- No --&gt; Refer[Refer to Doctor]     Fit -- Yes --&gt; Equip[Prepare equipment]     Equip --&gt; Patient[Prepare patient]     Patient --&gt; Perform[Perform the procedure]     Perform --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End   </pre> <p>The flowchart illustrates the workflow for near vision testing. It begins with 'Start', followed by 'Receive patient' and 'Assess/verify patient'. A decision diamond asks 'Fit For Procedure'. If 'No', the patient is referred to a doctor. If 'Yes', the workflow proceeds to 'Prepare equipment', 'Prepare patient', 'Perform the procedure', and 'Documentation', finally ending at 'End Task'.</p> |

| <b>WORK INSTRUCTION</b>                |   |   |   |
|--|---|---|---|
| <b>ACTIVITY</b>                        | <b>WORK PROCESS</b>   | <b>STANDARD</b>   | <b>REQUIREMENT</b>  |
| Receive Patient                        | <ul style="list-style-type: none"> <li>• Register patient particulars in record book</li> </ul>   | Malaysian Patient Safety Goal 2.0                               | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Referral letter.</li> <li>• Record book / census</li> </ul> |
| Assess / Verify Patient / Correct Site | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Verify correct site.</li> <li>• Verify correct procedure.</li> </ul>  | <i>Manual Arahan Kerja</i><br>Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> </ul>   |
| Prepare Equipment                      | Prepare the near vision chart   | <i>Manual Arahan Kerja</i>                                      | <ul style="list-style-type: none"> <li>• Near vision chart</li> </ul>   |
| Prepare Patient                        | <ul style="list-style-type: none"> <li>• Inform the patient about the procedure.</li> <li>• Request patient to sit comfortably on the seat provided</li> <li>• Ensure adequate light is focused on the near vision chart used</li> <li>• Ask patient to use reading glasses if available</li> </ul>   | Malaysian Patient Safety Goal 2.0                               |   |
| Perform the Procedure                  | <ol style="list-style-type: none"> <li>1) Start with the right eye while covering the left eye</li> <li>2) Request the patient to hold the card at a distance between 33 cm and 40 cm away from the patient.</li> <li>3) Ask the patient to read the sentences in the paragraph of the near vision card/chart that is visible and can be read with ease (starting from the</li> </ol> | Manual Arahan Kerja   |   |

|               |   |                            |  |
|---------------|---|----------------------------|--|
|               | <p>largest to the smallest possible)</p> <p>4) Record the paragraph with the smallest possible alphabets that the patient can read without much effort (e.g. N6)</p> <p>5) Repeat the entire process when testing the near vision of the left eye with the right eye covered.</p> |                            |  |
| Documentation | <ul style="list-style-type: none"> <li>Record procedure</li> <li>Enter results in the vision slip / patient records where applicable</li> </ul>   | <i>Manual Arahan Kerja</i> | <ul style="list-style-type: none"> <li>Procedure book / census.</li> </ul> |

## REFERENCES

Penjagaan dan rehabilitasi visual pesakit penglihatan terhad [Review of Penjagaan dan rehabilitasi visual pesakit penglihatan terhad]. (2009) Majlis Optik Malaysia.

<https://www.healthguidance.org/entry/author/dustin-flores>. (2019, December 9). Eye Examination: How Is Near Vision Tested? | HealthGuidance.org. HealthGuidance.org | for Better Health.  
<https://www.healthguidance.org/entry/10007/1/eye-examination-how-is-near-vision-tested.html>

Near Addition. (2009). Eyedocs. <https://www.eyedocs.co.uk/ophthalmology-articles/optics-refraction/684-near-addition.html>

### COLOR VISION TEST

|                           |  |
|---------------------------|--|
| <b>INTRODUCTION</b>       | A color vision test checks the ability to distinguish between different colors. Color vision can be assessed using Ishihara plates, each of which contains a colored circle of dots. Within the pattern of each circle are dots which form a number or shape that is clearly visible to those with normal color vision and difficult or impossible to see for those with a red-green color vision defect.  |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>The procedure will be performed by a privileged Assistant Medical Officer (AMO).</li> <li>All patients indicated for the procedure</li> </ul>   |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>To identify, classify, or grade a color vision deficiency</li> <li>To evaluate fitness for a certain occupation (congenital and acquired color deficiencies) or as a diagnostic aid (acquired color deficiency).</li> </ul>   |
| <b>WORKFLOW</b>           | <pre> graph TD     Start([Start]) --&gt; Receive[Receive patient]     Receive --&gt; Assess[Assess/verify patient]     Assess --&gt; Fit{Fit For Procedure}     Fit -- No --&gt; Refer[Refer to Doctor]     Fit -- Yes --&gt; PrepareEq[Prepare instrument/equipment]     PrepareEq --&gt; PreparePat[Prepare patient]     PreparePat --&gt; Perform[Perform the procedure]     Perform --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End   </pre> |

| <b>WORK INSTRUCTION</b>                |  |   |   |
|--|--|---|---|
| <b>ACTIVITY</b>                        | <b>WORK PROCESS</b>  | <b>STANDARD</b>   | <b>REQUIREMENT</b>  |
| Receive Patient                        | <ul style="list-style-type: none"> <li>• Register patient particulars in record book</li> </ul>  | Malaysian Patient Safety Goal 2.0                               | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Referral letter.</li> <li>• Record book / census</li> </ul> |
| Assess / Verify Patient / Correct Site | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Verify correct site.</li> <li>• Verify correct procedure.</li> </ul>   | <i>Manual Arahan Kerja</i><br>Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> </ul>   |
| Prepare Equipment                      | Make sure Ishihara chart ready to be used  | <i>Manual Arahan Kerja</i>                                      | <ul style="list-style-type: none"> <li>• Ishihara chart/book/ color vision chart</li> </ul>   |
| Prepare Patient                        | <ul style="list-style-type: none"> <li>• Request patient to sit comfortably on the seat provided</li> <li>• Inform the patient about the procedure.</li> </ul>   | <i>Manual Arahan Kerja</i>                                      |   |
| Perform the Procedure                  | <ol style="list-style-type: none"> <li>1) Ask patient to use reading glasses if available</li> <li>2) Ensure adequate light is focused on the colour vision chart used</li> <li>3) Examine one eye at a time</li> <li>4) Request the patient to hold the Ishihara Chart at an appropriate reading distance from the patient's eye (35 cm)</li> <li>5) Ask the patient to read the number displayed on each page of the chart</li> <li>6) Ask the patient to trace the colored line displayed if</li> </ol> | <i>Manual Arahan Kerja</i>                                      |   |

|               |  |                            |  |
|---------------|--|----------------------------|--|
|               | <p>the patient is unable to read / recognize numbers</p> <p>7) Record the result (e.g.: 24/24)</p> <p>8) Repeat the assessment on the other eye.</p> |                            |  |
| Documentation | <ul style="list-style-type: none"> <li>Record procedure</li> </ul>   | <i>Manual Arahan Kerja</i> | <ul style="list-style-type: none"> <li>Procedure book / census.</li> </ul> |

## REFERENCES

*Colour vision examination: A guide for employers.* (2005). Wwww.hse.gov.uk.  
<https://www.hse.gov.uk/pubns/web03.html>

*Color vision test: MedlinePlus Medical Encyclopedia.* (2003). Medlineplus.gov.  
<https://medlineplus.gov/ency/article/003387.html>

*Color vision testing.* (2023). Wwww.opticaldiagnostics.com.  
[https://www.opticaldiagnostics.com/info/color\\_vision\\_testing.html](https://www.opticaldiagnostics.com/info/color_vision_testing.html)

## INTRAOCULAR PRESSURE (IOP) MEASUREMENT USING HAND-HELD TONOMETER

|                           |  |
|---------------------------|--|
| <b>INTRODUCTION</b>       | Intraocular pressure (IOP) measurement is a procedure included in eye assessment.  |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be performed by a privileged Assistant Medical Officer (AMO).</li> <li>• All patients need IOP measurement.</li> </ul>   |
| <b>SPECIFIC OBJECTIVE</b> | To measure intraocular pressure IOP.   |
| <b>WORKFLOW</b>           | <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive Patient]     Receive --&gt; Assess[Assess / Verify Patient / Correct Site / Allergy Status]     Assess --&gt; Fit{Fit for Procedure}     Fit -- No --&gt; Refer[Refer to Doctor]     Fit -- Yes --&gt; Equip[Prepare Equipment / Medication]     Equip --&gt; Prep[Prepare Patient]     Prep --&gt; Perform[Perform the Procedure]     Perform --&gt; Comp{Complication}     Comp -- Yes --&gt; Refer     Comp -- No --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End   </pre> |

| WORK INSTRUCTION  |   |                                   |   |
|---|---|-----------------------------------|---|
| ACTIVITY  | WORK PROCESS  | STANDARD                          | REQUIREMENT   |
| Receive patient   | Register patient particulars in record book   | Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Referral letter.</li> <li>• Record book / census</li> </ul> |
| Assess / Verify Patient / Correct Site / Allergy status | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Verify correct site.</li> <li>• Verify correct procedure.</li> <li>• Ensure verbal consent has been taken.</li> </ul>   | <i>Manual Arahan Kerja</i>        | <ul style="list-style-type: none"> <li>• Patient record</li> </ul>  |
| Prepare Equipment /Medication                           | <ul style="list-style-type: none"> <li>• Prepare equipment</li> <li>• Check the functionality of tonopen and calibration</li> <li>• Prepare topical anesthesia</li> </ul>   | <i>Manual Arahan Kerja</i>        | <ul style="list-style-type: none"> <li>• Hand-held tonometer with tip cover.</li> <li>• Topical anaesthetic eye drops.</li> </ul>                 |
| Prepare patient.  | <ul style="list-style-type: none"> <li>• Explain the purpose of the procedure to patient.</li> <li>• Position the patient comfortably in a sitting position in a room with adequate lighting.</li> </ul>  | Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Patient record</li> </ul>  |
| Perform the Procedure                                   | <ul style="list-style-type: none"> <li>• Ask patient permission to start</li> </ul> <p><u>Steps Performed</u></p> <ol style="list-style-type: none"> <li>1) Instilled topical anaesthesia</li> <li>2) Instruct the patient to open both eyes and focus to the front</li> <li>3) Touch the cornea surface with the covered tip of the handheld tonometer.</li> </ol> | <i>Arahan Kerja manual</i>        | <ul style="list-style-type: none"> <li>• Topical Anesthesia eye drop</li> <li>• Hand-held tonometer</li> </ul>                                    |

|                  |  |                            |                          |
|------------------|--|----------------------------|--------------------------|
|                  | 4) Two readings taken within 5% accuracy   |                            |                          |
| Health Education | <ul style="list-style-type: none"> <li>Observe side effects / complications</li> </ul> |                            |                          |
| Documentation    | <ul style="list-style-type: none"> <li>Record procedure</li> </ul>                     | <i>Arahan Kerja manual</i> | Procedure book / census. |

#### REFERENCE

George Griffin Lewis. (2017). *The Ophthalmic Nurse (Classic Reprint)*. Forgotten Books.

Aziz, K., & Friedman, D. S. (2018). Tonometers—which one should I use? *Eye*, 32(5), 931–937. <https://doi.org/10.1038/s41433-018-0040-4>

Obert Edward Ang, Bargas, V. R., Henna, G., Michael, G., & Isabel, M. (2022). Comparison of Three Tonometers in Measuring Intraocular Pressure in Eyes That Underwent Myopic Laser in situ Keratomileusis and Photorefractive Keratectomy. *Clinical Ophthalmology, Volume 16*, 1623–1637. <https://doi.org/10.2147/opth.s362344>

## IOP MEASUREMENT USING NON-CONTACT TONOMETRY (AIR PUFF TONOMETER)

|                           |   |
|---------------------------|---|
| <b>INTRODUCTION</b>       | Intraocular pressure (IOP) measurement is a procedure included in eye assessment.   |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be performed by a privileged Assistant Medical Officer (AMO).</li> <li>• All patient who needs IOP measurement using non-contact method.</li> </ul>   |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• The instruments used to measure IOP can be divided into contact and non-contact tonometry. Air Puff tonometer is an example of non-contact tonometry.</li> </ul>   |
| <b>WORKFLOW</b>           | <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive patient]     Receive --&gt; Assess[Assess / verify patient / correct site]     Assess --&gt; Fit{Fit for Procedure?}     Fit -- No --&gt; Refer[Refer to doctor]     Fit -- Yes --&gt; Equip[Prepare equipment]     Equip --&gt; Patient[Prepare patient]     Patient --&gt; Perform[Perform the procedure]     Perform --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End   </pre> |

| WORK INSTRUCTION  |   |   |   |
|---|---|---|---|
| ACTIVITY  | WORK PROCESS  | STANDARD  | REQUIREMENT   |
| Receive Patient   | <ul style="list-style-type: none"> <li>Register patient particulars in record book</li> </ul>   | Malaysian Patient Safety Goal 2.0                               | <ul style="list-style-type: none"> <li>Patient appointment card / record</li> <li>Referral letter / Record book / census</li> </ul> |
| Assess / Verify Patient / Correct Site / Allergy status | <ul style="list-style-type: none"> <li>Verify correct patient</li> <li>Verify correct site</li> <li>Verify correct procedure</li> <li>Ensure verbal consent has been taken</li> </ul>   | <i>Manual Arahan Kerja</i><br>Malaysian Patient Safety Goal 2.0 |   |
| Explanation   | <ul style="list-style-type: none"> <li>Verify the correct patient</li> <li>Explain to the patient regarding the procedure (sudden surge of air hitting the eye).</li> </ul>   | Malaysian Patient Safety Goal 2.0                               | <ul style="list-style-type: none"> <li>Patient appointment card</li> </ul>  |
| Prepare Equipment / machine                             | <ul style="list-style-type: none"> <li>Check the functionality of Airpuff tonometer.</li> <li>Check calibration.</li> <li>Position the patient comfortably in a sitting position in a room with adequate lighting.</li> </ul> | <i>Arahan Kerja Manual</i>                                      | <ul style="list-style-type: none"> <li>Airpuff tonometer machine</li> </ul>   |
| Perform the Procedure                                   | <ul style="list-style-type: none"> <li>Ask patient permission to start</li> <li><u>Steps Performed</u></li> </ul> <p>1) Instruct patient to rest the head and chin on the</p>   | <i>Arahan Kerja Manual</i>                                      | <u>Steps of Items</u><br>1) Airpuff tonometer machine   |

|                  |  |                            |  |
|------------------|--|----------------------------|--|
|                  | chin and headrest.<br>2) Instruct the patient to open both eyes to focus on the target on the machine.<br>3) Align the target on the patient's cornea.<br>4) Press the button to measure the pressure.<br>5) Repeat twice and an average reading is recorded.<br>6) Print the result |                            |  |
| Health Education | <ul style="list-style-type: none"> <li>Observe side effects</li> </ul>   |                            |  |
| Documentation    | <ul style="list-style-type: none"> <li>Record procedure</li> </ul>   | <i>Arahan Kerja Manual</i> | <ul style="list-style-type: none"> <li>Procedure book / census.</li> </ul> |

**REFERENCE**

Koprowski, R. (2019, April 1). *Air-Puff Tonometers: Challenges and insights*.  
<https://iopscience.iop.org/book/mono/978-0-7503-2018-4>

Shen, Y., Chen, X., Xian, Y., Wang, X., Wang, X., & Zhou, X. (2022). Safety of intraocular pressure measurement using air-puff tonometer after implantable collamer lens implantation. *Journal of Cataract and Refractive Surgery*, 48(8), 900–905. <https://doi.org/10.1097/j.jcrs.0000000000000886>

Antwi-Boasiako, S. (2020). *Ophthalmic nurses: vital team members in the push for better eye health*. PubMed Central (PMC).  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8115702/>

| RELATIVE AFFERENT PUPILLARY DEFECT (RAPD) TEST |  |
|--|--|
| <b>INTRODUCTION</b>                            | The Relative Afferent Pupillary Defect (RAPD) test is a procedure designed to examine pupillary reactions when light is shone back and forth between two eyes, resulting in asymmetric pupillary responses. This is typically done using a penlight. The patient's pupils dilate when a bright light is swung from the unaffected eye to the affected eye.   |
| <b>SCOPE</b>                                   | <ul style="list-style-type: none"> <li>• The procedure will be performed by a privileged Assistant Medical Officer (AMO).</li> <li>• All new case presenting to eye clinic.</li> </ul>   |
| <b>SPECIFIC OBJECTIVE</b>                      | <ul style="list-style-type: none"> <li>• To detect lesion or defect in the visual pathway on the afferent side.</li> </ul>   |
| <b>WORKFLOW</b>                                | <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive patient]     Receive --&gt; Assess[Assess / verify patient / correct site]     Assess --&gt; Fit{Fit for Procedure?}     Fit -- No --&gt; Refer[Refer to doctor]     Fit -- Yes --&gt; Equip[Prepare equipment]     Equip --&gt; Patient[Prepare patient]     Patient --&gt; Perform[Perform the procedure]     Perform --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End           </pre> <p>The flowchart illustrates the workflow for the Relative Afferent Pupillary Defect (RAPD) Test. It begins with 'Start Task', followed by 'Receive patient', 'Assess / verify patient / correct site', and a decision point 'Fit for Procedure?'. If the patient is not fit for the procedure, the workflow proceeds to 'Refer to doctor'. If the patient is fit, the workflow continues through 'Prepare equipment', 'Prepare patient', 'Perform the procedure', 'Health Education', and 'Documentation', finally reaching 'End Task'.</p> |

| WORK INSTRUCTION                       |  |   |  |
|--|--|---|--|
| ACTIVITY                               | WORK PROCESS   | STANDARD  | REQUIREMENT  |
| Receive Patient                        | <ul style="list-style-type: none"> <li>Register patient particulars in record book</li> </ul>  | Malaysian Patient Safety Goal 2.0                               | <ul style="list-style-type: none"> <li>Patient appointment card / record</li> <li>Referral letter</li> <li>Record book / census</li> </ul> |
| Assess / Verify Patient / Correct Site | <ul style="list-style-type: none"> <li>Verify correct patient.</li> <li>Verify correct site.</li> <li>Verify correct procedure.</li> <li>Ensure verbal consent has been taken.</li> </ul>  | <i>Manual Arahan Kerja</i><br>Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>Patient appointment card / record</li> </ul>  |
| Prepare Equipment                      | <ul style="list-style-type: none"> <li>Preparation of instrument</li> </ul>  | Manual Arahan Kerja   | <ul style="list-style-type: none"> <li>Appropriate semi-darkened room</li> <li>Bright pen light / torch light.</li> </ul>                  |
| Prepare Patient                        | <ul style="list-style-type: none"> <li>Inform the patient about the procedure.</li> <li>Position patient in a comfortable position</li> <li>Dim the light</li> </ul>   | Manual Arahan Kerja   | <ul style="list-style-type: none"> <li>Patient record</li> <li>Comfortable chair / couch</li> </ul>  |
| Perform the Procedure                  | <ul style="list-style-type: none"> <li>Ask patient permission to start.</li> <li>Hand washing</li> </ul> <p><u>Steps Performed</u></p> <ol style="list-style-type: none"> <li>1) Keep the beam of light steadily on the first eye for at least 3 seconds.</li> <li>2) Observe whether the pupil of the eye being illuminated reacts briskly and constricts fully to the light. Also</li> </ol> | Manual Arahan Kerja   | <ul style="list-style-type: none"> <li>Hand sanitizer / soap</li> <li>Bright pen light / torch light</li> </ul>                            |

|                  |   |                                   |  |
|------------------|---|-----------------------------------|--|
|                  | <p>observe what happens to the pupil of the other eye: does it also constrict briskly?</p> <p>3) Move the light quickly to shine in the other eye. Hold the light steady for 3 seconds.</p> <p>4) Observe whether the pupil being illuminated stays the same size, or whether it gets bigger. Observe also what happens to the other eye.</p> |                                   |  |
| Health Education | <ul style="list-style-type: none"> <li>• Emphasize follow up compliance.</li> <li>• Compliance to medication</li> </ul>   | Malaysian Patient Safety Goal 2.0 |  |
| Documentation    | <ul style="list-style-type: none"> <li>• Record the procedure</li> </ul>  |                                   | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> </ul> |

## REFERENCE

- A. Heijl, & Greve, E. L. (2012). *Sixth International Visual Field Symposium*. Springer Science & Business Media.
- Broadway, D. C. (2013, February 5). *Community Eye Health Journal " how to test for a relative afferent pupillary defect (RAPD)*. Community Eye Health Journal. <https://www.cehjournal.org/article/how-to-test-for-a-relative-afferent-pupillary-defect-rapd>
- Gillmann, K., & Mansouri, K. (2023). *The Science of Glaucoma Management*. Elsevier.

**INSTILLATION OF EYE DROPS / APPLICATION OF EYE OINTMENT**

|                           |  |
|---------------------------|--|
| <b>INTRODUCTION</b>       | Instillation of eye drops / application of eye ointment into an appropriate eye.   |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>The procedure will be performed by a privileged Assistant Medical Officer (AMO)</li> <li>All patients indicated for the procedure</li> </ul>  |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>Therapeutic               <ol style="list-style-type: none"> <li>To relieve pain and discomfort</li> <li>To treat infection</li> <li>To treat inflammation</li> <li>To reduce Intra Ocular Pressure (IOP)</li> </ol> </li> <li>Diagnostic               <ol style="list-style-type: none"> <li>To dilate for fundus examination and procedure</li> </ol> </li> <li>Pre-operative treatment</li> </ul>   |
| <b>WORKFLOW</b>           | <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive Patient]     Receive --&gt; Assess[Assess / Verify Patient /<br/>Correct Site / Allergy Status]     Assess --&gt; Fit{Fit for<br/>Procedure}     Fit -- No --&gt; Refer[Refer to Doctor]     Fit -- Yes --&gt; Equip[Prepare Equipment /<br/>Medication]     Equip --&gt; Patient[Prepare Patient]     Patient --&gt; Perform[Perform the<br/>Procedure]     Perform --&gt; Comp{Complication}     Comp -- Yes --&gt; Refer     Comp -- No --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End   </pre> |

| <b>WORK INSTRUCTION</b>                                 |  |   |   |
|---|--|---|---|
| <b>ACTIVITY</b>   | <b>WORK PROCESS</b>  | <b>STANDARD</b>   | <b>REQUIREMENT</b>  |
| Receive Patient   | <ul style="list-style-type: none"> <li>• Register patient particulars in record book</li> </ul>  | Malaysian Patient Safety Goal 2.0                                   | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Referral letter.</li> <li>• Record book / census</li> </ul> |
| Assess / Verify Patient / Correct Site / Allergy status | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Verify correct site.</li> <li>• Verify correct procedure.</li> <li>• Verify allergy status</li> <li>• Ensure verbal consent has been taken.</li> </ul>   | <i>Manual Arahan Kerja</i><br><br>Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> </ul>   |
| Prepare Equipment / Medication                          | <ul style="list-style-type: none"> <li>• Prepare Medication</li> <li>• Verify correct medication.</li> <li>• Check medication expiry date.</li> <li>• Disposable item</li> </ul>   |   | <ul style="list-style-type: none"> <li>• Eye drop / Eye ointment</li> <li>• Disposable items<br/>i. Cotton balls</li> </ul>                       |
| Prepare Patient   | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Explain the procedure to the patient including potential side effects</li> <li>• Position patient in a sitting position with head tilted back</li> </ul> | <i>Manual Arahan Kerja</i>  | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> </ul>   |
| Perform the Procedure                                   | <ul style="list-style-type: none"> <li>• Ask patient permission to start.</li> </ul>   | <i>Manual Arahan Kerja</i>  |   |

|  |  |  |  |
|--|--|--|--|
|  | <p><u>Instillation Of Eye Drop</u></p> <ol style="list-style-type: none"><li>1) Wash hand. Use aseptic techniques and protocols following infection control guidelines</li><li>2) Remove cap; hold the dropper over the eye.</li><li>3) Pull lower eyelid in the non-dominion hand, and dropper on the dominion hand gently compress the bulb to allow one drop to fall into the lower conjunctiva sac.</li><li>4) Cap must always be on non-hand during instillation of eye drops</li><li>5) Ensure that the dropper is about 2cm above the eye.</li><li>6) Ask the patient to close the eye gently for 30 seconds.</li><li>7) Wipe any excess fluid with swab.</li><li>8) Observe for any complain of irritation or reaction.</li><li>9) Notify the Doctor of any drug allergic reaction.</li><li>10) Replace the cap immediately after use.</li><li>11) Wash and dry hands.</li></ol> |  | <ul style="list-style-type: none"><li>• Eye drop</li></ul> |
|--|--|--|--|

|                  |  |                            |  |
|------------------|--|----------------------------|--|
|                  | <p><u>Application of Eye Ointment</u></p> <ol style="list-style-type: none"> <li>1) Ask patient to look up.</li> <li>2) Gently pull lower eye lid.</li> <li>3) Squeeze 1cm of ointment into the middle lower fornix.</li> <li>4) Ask the patient to close the eye gently for 30 seconds.</li> <li>5) Wipe any excess ointment with swab.</li> <li>6) Observe for any complain of irritation or reaction.</li> <li>7) Notify the Doctor of any drug allergic reaction.</li> <li>8) Replace the cap immediately after use.</li> <li>9) Wash and dry hands</li> </ol> |                            | <ul style="list-style-type: none"> <li>• Eye ointment</li> </ul>             |
| Health Education | <ul style="list-style-type: none"> <li>• Do not drive until your normal vision has been restored</li> </ul>  |                            |  |
| Documentation    | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>   | <i>Manual Arahan Kerja</i> | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> </ul> |

**REFERENCES**

Andrews S . (2006). *Pharmacology. In: Marsden J. Ophthalmic Care* [Review of *Pharmacology. In: Marsden J. Ophthalmic Care*].

Vera, M. (2012, April 12). *Eye Drop Instillation — Nursing Procedure*. Nurseslabs. <https://nurseslabs.com/eye-drop-instillation-nursing-procedure/>

*PRIMARY EYE CARE TRAINING MANUAL*. (2018).

<https://www.afro.who.int/sites/default/files/2018-06/WEB-2835-OMS-Afro-PrimaryEyeCaretrainingmanual-20180406.pdf>

**DIRECT OPHTHALMOSCOPY**

|                    |  |
|--------------------|--|
| INTRODUCTION       | Direct ophthalmoscopy allows for the visual examination of the posterior segment of the eye. The hand-held direct ophthalmoscope uses the patient's eye as a simple magnifier by aligning its viewing and illuminating beams.  |
| SCOPE              | <ul style="list-style-type: none"> <li>• The procedure will be performed by a privileged Assistant Medical Officer (AMO)</li> <li>• All patients indicated for the procedure</li> </ul>  |
| SPECIFIC OBJECTIVE | <ul style="list-style-type: none"> <li>• For ocular fundus examination</li> <li>• Evaluation of an eye's media</li> <li>• Evaluation of a patient's fixation pattern</li> </ul>  |
| WORKFLOW           | <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive Patient]     Receive --&gt; Assess[Assess / Verify Patient /<br/>Correct Site / Allergy Status]     Assess --&gt; Fit{Fit for<br/>Procedure}     Fit -- No --&gt; Refer[Refer to Doctor]     Fit -- Yes --&gt; Equip[Prepare Equipment /<br/>Medication]     Equip --&gt; Prep[Prepare Patient]     Prep --&gt; Perform[Perform the<br/>Procedure]     Perform --&gt; Comp{Complication}     Comp -- Yes --&gt; Refer     Comp -- No --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End   </pre> |

| <b>WORK INSTRUCTION</b>                                 |  |   |  |
|---|--|---|--|
| <b>ACTIVITY</b>   | <b>WORK PROCESS</b>  | <b>STANDARD</b>   | <b>REQUIREMENT</b>   |
| Receive Patient   | <ul style="list-style-type: none"> <li>• Register patient particulars in record book</li> </ul>  | Malaysian Patient Safety Goal 2.0                                   | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Referral letter.</li> <li>• Record book / census</li> </ul>  |
| Assess / Verify Patient / Correct Site / Allergy status | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Verify correct site.</li> <li>• Verify correct procedure.</li> <li>• Verify allergy status</li> <li>• Ensure verbal consent has been taken.</li> </ul> | <i>Manual Arahan Kerja</i><br><br>Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> </ul>  |
| Prepare Equipment / Medication                          | <ul style="list-style-type: none"> <li>• Prepare Direct Ophthalmoscope</li> <li>• Verify correct medication.</li> <li>• Check medication expiry date.</li> <li>• Prepare disposable item</li> </ul>                                | <i>Manual Arahan Kerja</i>  | <ul style="list-style-type: none"> <li>• Direct Ophthalmoscope</li> <li>• Medication               <ol style="list-style-type: none"> <li>Topical Anaesthesia</li> <li>Dilating drops.</li> </ol> </li> <li>• Disposable items               <ol style="list-style-type: none"> <li>Cotton ball</li> </ol> </li> </ul> |
| Prepare Patient   | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Confirm adequate dilation.</li> <li>• Inform the patient about the procedure.</li> <li>• Ask for chaperon assistance if necessary</li> </ul>           | <i>Manual Arahan Kerja</i>  | <ul style="list-style-type: none"> <li>• Patient record</li> <li>• Dilating eye drop</li> </ul>  |
| Perform the Procedure                                   | <ul style="list-style-type: none"> <li>• Ask patient permission to start.</li> </ul>   | <i>Manual Arahan Kerja</i>  |  |

|  |   |  |  |
|--|---|--|--|
|  | <p><u>Steps Performed</u></p> <ol style="list-style-type: none"><li>1) Dilate Both eye (if ordered by Ophthalmologist)</li><li>2) Check for eye dilation</li><li>3) Request patient to sit comfortably on the seat provided</li><li>4) Position the patient so that the ophthalmoscope is held directly at the level of the patient's eye.</li><li>5) Dim the lights</li><li>6) Turn on the ophthalmoscope and set the light to the correct aperture</li><li>7) Instruct the patient to focus on an object straight ahead on the wall</li><li>8) To exam the patient's RIGHT eye, hold the ophthalmoscope in your RIGHT hand and use your RIGHT eye to look through the instrument</li><li>9) Place your left hand on the patient's head and place your thumb on their eyebrow</li><li>10) Hold the ophthalmoscope about 6 inches from the eye and 25 degrees to the right of the patient</li><li>11) Find the red reflex</li></ol> |  |  |
|--|---|--|--|

|                  |   |  |   |
|------------------|---|--|---|
|                  | <p>12) Move in closer, staying nasally until you see the optic nerve</p> <p>13) Rotate the diopter lens until the optic disc comes into focus</p> <p>14) Measure the cup to disc ratio</p> <p>15) Scan slightly up, down, right and left to look at the vessels</p> <p>16) Move out temporally to find the macula and fovea</p> <p>17) Repeat the same technique on the other eye</p> |  |   |
| Health Education | <ul style="list-style-type: none"> <li>• Do not drive until your normal vision has been restored</li> <li>• Wear sunglasses to protect your eyes from sunlight</li> <li>• The drops usually wear off in several hours.</li> </ul>   |  |   |
| Documentation    | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>  |  | <ul style="list-style-type: none"> <li>• Procedure book / census</li> </ul> |

## REFERENCE

*Examination of the Optic Nerve at the Slit-Lamp Biomicroscope with a Handheld Lens -*

*EyeWiki.* (2023). Eyewiki.aao.org.

[https://eyewiki.aao.org/Examination\\_of\\_the\\_Optic\\_Nerve\\_at\\_the\\_Slit-Lamp\\_Biomicroscope\\_with\\_a\\_Handheld\\_Lens](https://eyewiki.aao.org/Examination_of_the_Optic_Nerve_at_the_Slit-Lamp_Biomicroscope_with_a_Handheld_Lens)

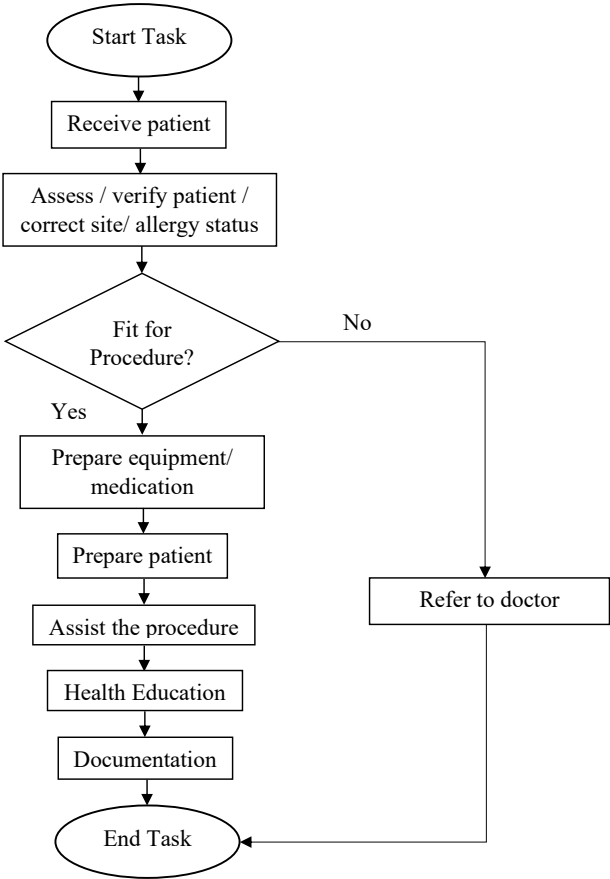
*Ophthalmoscopy.* (2020). Ucsfhealth.org. <https://www.ucsfhealth.org/medical-tests/ophthalmoscopy>

*Moran CORE | How to Use the Direct Ophthalmoscope.* (2018).

<https://morancore.utah.edu/basic-ophthalmology-review/how-to-use-the-direct-ophthalmoscope/>

*Welch Allyn 3.5 V Coaxial Ophthalmoscope.* (2006). Wwww.hillrom.com. Retrieved January 22, 2024, from <https://www.hillrom.com/en/products/3-5v-coaxial-ophthalmoscope/>

**SCHIRMER'S TEST**

|                           |   |
|---------------------------|---|
| <b>INTRODUCTION</b>       | The Schirmer's Test evaluate aqueous tear production. This test is mainly performed on patients experiencing symptoms of dry eye.   |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be assisted by a privileged Assistant Medical Officer (AMO).</li> <li>• All patient with severe dry eye condition.</li> </ul>   |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• To determine the severity of dry eye.</li> </ul>   |
| <b>WORKFLOW</b>           |  <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive patient]     Receive --&gt; Assess[Assess / verify patient / correct site/ allergy status]     Assess --&gt; Fit{Fit for Procedure?}     Fit -- No --&gt; Refer[Refer to doctor]     Fit -- Yes --&gt; Equip[Prepare equipment/ medication]     Equip --&gt; Patient[Prepare patient]     Patient --&gt; Assist[Assist the procedure]     Assist --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End   </pre> <p>The workflow diagram for the Schirmer's Test procedure is as follows:</p> <ol style="list-style-type: none"> <li>Start Task</li> <li>Receive patient</li> <li>Assess / verify patient / correct site/ allergy status</li> <li>Decision: Fit for Procedure?       <ul style="list-style-type: none"> <li>If No: Refer to doctor</li> <li>If Yes: Proceed to the next steps.</li> </ul> </li> <li>Prepare equipment/ medication</li> <li>Prepare patient</li> <li>Assist the procedure</li> <li>Health Education</li> <li>Documentation</li> <li>End Task</li> </ol> |

| <b>WORK INSTRUCTION</b>                                 |  |   |   |
|---|--|---|---|
| <b>ACTIVITY</b>   | <b>WORK PROCESS</b>  | <b>STANDARD</b>   | <b>REQUIREMENT</b>  |
| Receive Patient   | <ul style="list-style-type: none"> <li>• Register patient particulars in record book</li> </ul>  | Malaysian Patient Safety Goal 2.0   | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Referral letter</li> <li>• Record book/ census</li> </ul>                     |
| Assess / Verify Patient / Correct Site / Allergy status | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Verify correct site</li> <li>• Verify correct procedure.</li> <li>• Verify allergy status</li> <li>• Explain to the patient the indication of the procedure</li> <li>• Ensure verbal consent has been taken</li> </ul> | Malaysian Patient Safety Goal 2.0   | <ul style="list-style-type: none"> <li>• Record book/ census</li> </ul>   |
| Prepare Equipment/Medication                            | <ul style="list-style-type: none"> <li>• Prepare Schirmer's test paper</li> <li>• Verify correct medication.</li> <li>• Check medication and equipment expiry date.</li> </ul>   | Policies & procedures on Infection and Control. MOH. 2018 (3 <sup>rd</sup> Edition) | <ul style="list-style-type: none"> <li>• A pair of Schirmer's test paper</li> <li>• Timer clock</li> <li>• Ruler</li> <li>• Topical anaesthetic eye drop</li> </ul> |
| Prepare patient   | <ul style="list-style-type: none"> <li>• Inform the patient about the procedure.</li> <li>• Position patient in supine or seated position.</li> <li>• Chaperon assistance if necessary</li> </ul>  | Malaysian Patient Safety Goal 2.0<br><br><i>Manual Arahan Kerja</i>                 | <ul style="list-style-type: none"> <li>• Patient record</li> </ul>  |
| Perform the procedure                                   | <ol style="list-style-type: none"> <li>1) Topical anaesthetic eye drop</li> <li>2) Ask patient to look up and draw the lower lid downward and lateral.</li> <li>3) Hook the rounded bent-end of the sterile strip to the outer end of the lower fornix of</li> </ol>                               | <i>Manual Arahan Kerja</i>  | <ul style="list-style-type: none"> <li>• Topical anaesthetic eye drop</li> <li>• Schirmer strip</li> </ul>  |

|                  |   |                            |  |
|------------------|---|----------------------------|--|
|                  | <p>each eye to avoid touching the cornea &amp; eyelashes which can produce reflex lacrimation and pain.</p> <p>4) Set the timer for 5 minutes</p> <p>5) Asked the patient to keep eyes gently closed.</p> <p>6) Remove the Schirmer” test paper after 5 minutes.</p> <p>7) Measure the moistened part of Schirmer’s Test paper</p> <p>8) Normal tear function, &gt; 15mm</p> <p>9) Mild dry eye, 10 - 15mm</p> <p>10) Moderate dry eye, 5 - 10mm</p> <p>11) Severe dry eye, 0 - 5mm</p> |                            | <ul style="list-style-type: none"> <li>• Timer clock</li> <li>• Ruler</li> </ul> |
| Health Education | <ul style="list-style-type: none"> <li>• Emphasize on follow up compliance</li> </ul>   |                            |  |
| Documentation    | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>  | <i>Manual Arahan Kerja</i> | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> </ul>     |

## REFERENCE

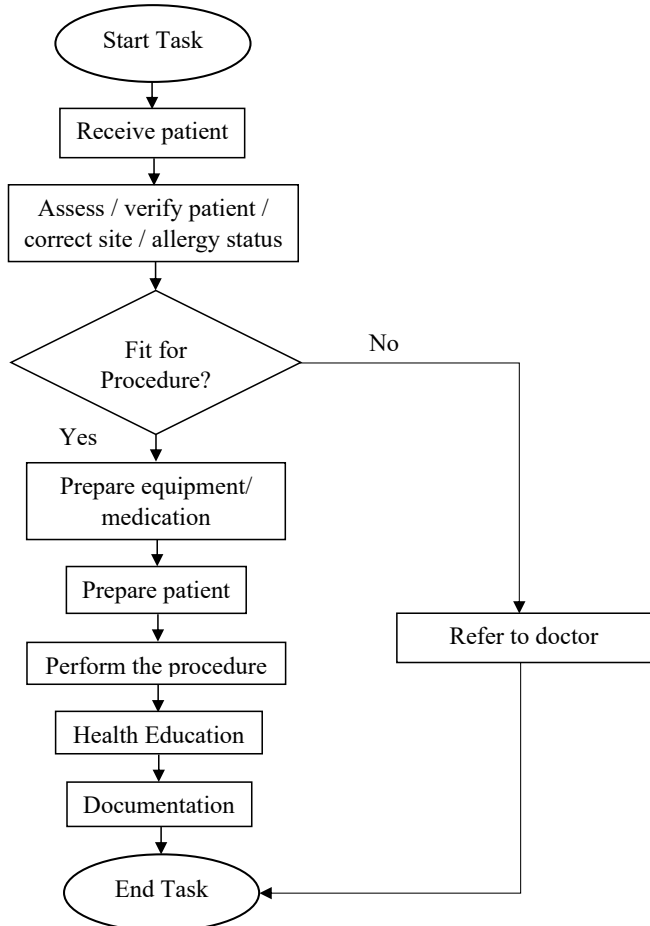
Brott, N. R., & Ronquillo, Y. (2023, May 1). *Schirmer Test - StatPearls - NCBI Bookshelf*. National Library of Medicine. <https://www.ncbi.nlm.nih.gov/books/NBK559159/>

Stevens, S. (2011, December). *Schirmer's test*. Community eye health. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3284761/>

Chi, E., & Fletcher, J. (2017a, February 23). *Schirmer's test: What to expect with the Dry Eye Test*. Medical News Today. <https://www.medicalnewstoday.com/articles/315974>

**pH TESTING**

|                           |   |
|---------------------------|---|
| <b>INTRODUCTION</b>       | PH testing is essential in the event of a chemical eye injury, as the normal pH of the eye is 7.4. The pH can vary, being either alkaline or acidic.                              |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be performed by a privileged Assistant Medical Officer (AMO).</li> <li>• All patient with chemical injury.</li> </ul> |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• To evaluate pH status.</li> </ul>  |

**WORKFLOW**

| <b>WORK INSTRUCTION</b>                                 |  |   |  |
|---|--|---|--|
| <b>ACTIVITY</b>   | <b>WORK PROCESS</b>  | <b>STANDARD</b>   | <b>REQUIREMENT</b>   |
| Receive Patient   | <ul style="list-style-type: none"> <li>• Register patient particulars in patient's record book</li> </ul>  | Malaysian Patient Safety Goal 2.0                                   | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Referral letter</li> <li>• Record book / census</li> </ul>   |
| Assess / Verify Patient / Correct Site / Allergy status | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Verify correct site.</li> <li>• Verify correct procedure.</li> <li>• Ensure verbal consent has been taken.</li> </ul>  | <i>Manual Arahan Kerja</i><br><br>Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> </ul>  |
| Prepare Equipment / Medication                          | <ul style="list-style-type: none"> <li>• Prepare disposable item.</li> <li>• Verify correct medication.</li> <li>• Check medication expiry date.</li> </ul>  |   | <ul style="list-style-type: none"> <li>• Disposable items               <ol style="list-style-type: none"> <li>Litmus paper (acid-base pH paper)</li> </ol> </li> <li>• Medication               <ol style="list-style-type: none"> <li>Topical Anaesthesia</li> </ol> </li> </ul> |
| Prepare Patient   | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Inform the patient about the procedure.</li> <li>• Position patient in supine or seated before procedure.</li> <li>• Chaperon assistance if necessary</li> </ul>   | <i>Manual Arahan Kerja</i>  | <ul style="list-style-type: none"> <li>• Patient record</li> </ul>   |
| Perform the Procedure                                   | <ul style="list-style-type: none"> <li>• Ask patient permission to start.</li> </ul> <p><u>Steps Performed</u></p> <ol style="list-style-type: none"> <li>1) Do hand wash.</li> <li>2) Instruct patient to look up.</li> <li>3) Pull down the lower lid.</li> <li>4) Litmus paper (acid-base pH paper) applied to conjunctiva fornix (where bulbar and palpebral conjunctiva meet)</li> <li>5) Observe eye appearance for injury</li> <li>6) Interpretation           <ul style="list-style-type: none"> <li>• Normal pH 7</li> <li>• Alkaline 8-14</li> <li>• Acid 1-6</li> </ul> </li> </ol> | <i>Manual Arahan Kerja</i>  |  |

|                  |   |                            |  |
|------------------|---|----------------------------|--|
| Health Education | <ul style="list-style-type: none"> <li>• Observe side effects / complications</li> <li>• Emphasize on follow up compliance</li> </ul> |                            |  |
| Documentation    | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>  | <i>Manual Arahan Kerja</i> | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> </ul> |

## REFERENCES

- Buchan, J. C., Ashiq, A., Kitson, N., Dixon, J., Cassels-Brown, A., & Bradbury, J. A. (2009). Nurse specialist treatment of eye emergencies: Five year follow up study of quality and effectiveness. *International Emergency Nursing*, 17(3), 149–154. <https://doi.org/10.1016/j.ienj.2008.12.002>
- George Griffin Lewis. (2017). *The Ophthalmic Nurse (Classic Reprint)*. Forgotten Books.
- Sheffield, V. M. (1983). Training for primary and preventive eye care. *Social Science & Medicine*, 17(22), 1797–1808. [https://doi.org/10.1016/0277-9536\(83\)90395-7](https://doi.org/10.1016/0277-9536(83)90395-7)

**FLUORESCEIN EYE STAINING TEST**

|                           |  |
|---------------------------|--|
| <b>INTRODUCTION</b>       | Fluorescein eye staining is a procedure used to detect damage or wound leaks of the cornea by utilizing fluorescein and blue light.  |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be performed by a privileged Assistant Medical Officer (AMO).</li> <li>• All patient with cornea injury / disease.</li> </ul>  |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• To identify               <ol style="list-style-type: none"> <li>i. Cornea abrasions</li> <li>ii. Epithelial defect.</li> <li>iii. Cornea ulcer.</li> <li>iv. Cornea wound leaking.</li> <li>v. Abnormal tear production</li> </ol> </li> </ul>   |
| <b>WORKFLOW</b>           | <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive patient]     Receive --&gt; Assess[Assess / verify patient / correct site / allergy status]     Assess --&gt; Fit{Fit for Procedure?}     Fit -- Yes --&gt; Equip[Prepare equipment/ medication]     Equip --&gt; Patient[Prepare patient]     Patient --&gt; Perform[Perform the procedure]     Perform --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Fit -- No --&gt; Refer[Refer to doctor]     Refer --&gt; End   </pre> |

| WORK INSTRUCTION  |  |   |  |
|---|--|---|--|
| ACTIVITY  | WORK PROCESS   | STANDARD  | REQUIREMENT  |
| Receive Patient   | <ul style="list-style-type: none"> <li>Register patient particulars in patient's record book</li> </ul>  | Malaysian Patient Safety Goal 2.0                                   | <ul style="list-style-type: none"> <li>Patient appointment card / record</li> <li>Referral letter</li> <li>Record book / census</li> </ul> |
| Assess / Verify Patient / Correct Site / Allergy status | <ul style="list-style-type: none"> <li>Verify correct patient.</li> <li>Verify correct site.</li> <li>Verify correct procedure.</li> <li>Ensure verbal consent has been taken.</li> </ul>  | <i>Manual Arahan Kerja</i><br><br>Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>Patient appointment card / record</li> </ul>  |
| Prepare Equipment / Medication                          | <ul style="list-style-type: none"> <li>Verify correct medication.</li> <li>Check medication expiry date.</li> <li>Prepare equipment</li> </ul>   |   | <ul style="list-style-type: none"> <li>Topical anaesthesia</li> <li>Fluorescein strip</li> </ul>   |
| Prepare Patient   | <ul style="list-style-type: none"> <li>Inform the patient about the procedure.</li> <li>Position patient in supine or seated position.</li> <li>Chaperon assistance if necessary</li> </ul>  | <i>Manual Arahan Kerja</i>  | <ul style="list-style-type: none"> <li>Patient record</li> </ul>   |
| Perform the Procedure                                   | <ul style="list-style-type: none"> <li>Ask patient permission to start.</li> </ul> <p><u>Steps Performed</u></p> <ol style="list-style-type: none"> <li>1) Ask the patient to look upwards.</li> <li>2) Stain fluorescein strip with topical anaesthesia.</li> <li>3) Use a fluorescein strip to touch the surface of conjunctiva and ask patient to blink.</li> <li>4) Examine the eye using slit lamp with cobalt-blue light to detect the finding.</li> </ol> | <i>Manual Arahan Kerja</i>  |  |
| Health Education  | <ul style="list-style-type: none"> <li>Compliance to medication</li> <li>Emphasize on follow up compliance</li> </ul>  |   |  |
| Documentation   | <ul style="list-style-type: none"> <li>Record procedure</li> </ul>   | <i>Manual Arahan Kerja</i>  | <ul style="list-style-type: none"> <li>Procedure book / census.</li> </ul>   |

**REFERENCES**

El Toukhy, E. A. (2020). *Oculoplastic surgery : a practical guide to common disorders*. Springer.

Fu, H., Garvin, M. K., MacGillivray, T., Xu, Y., & Zheng, Y. (2021). *Ophthalmic medical image analysis : 8th international workshop, OMIA 2021 : held in conjunction with MICCAI 2021, Strasbourg, France, September 27, 2021 : proceedings*. Springer.

Mehdi Shajari, Siegfried Priglinger, Kohnen, T., Kreutzer, T. C., & Mayer, W. J. (2023). *Cataract and Lens Surgery*. Springer Nature.

## EYE IRRIGATION

|                           |  |
|---------------------------|--|
| <b>INTRODUCTION</b>       | Eye irrigation is a procedure to flush particles and harmful chemicals from the conjunctiva and cornea.  |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>The procedure will be performed by a privileged Assistant Medical Officer (AMO).</li> <li>This procedure is recommended for all patients with a chemical injury.</li> <li>Eye irrigation is advisable for all patients with a history of a foreign body entering the eye.</li> </ul>  |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>To remove small particles inside the eye.</li> <li>To neutralize pH values.</li> </ul>  |
| <b>WORKFLOW</b>           | <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive Patient]     Receive --&gt; Assess[Assess / Verify Patient /<br/>Correct Site / Allergy Status]     Assess --&gt; Fit{Fit for<br/>Procedure}     Fit -- No --&gt; Refer[Refer to Doctor.]     Fit -- Yes --&gt; Equip[Prepare Equipment /<br/>Medication]     Equip --&gt; Prep[Prepare Patient]     Prep --&gt; Perform[Perform the<br/>Procedure]     Perform --&gt; Comp{Complication}     Comp -- Yes --&gt; Refer     Comp -- No --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End           </pre> <p>The flowchart illustrates the workflow for eye irrigation. It begins with 'Start Task', followed by 'Receive Patient'. The next step is 'Assess / Verify Patient / Correct Site / Allergy Status', which leads to a decision diamond 'Fit for Procedure'. If the patient is not fit, the workflow proceeds to 'Refer to Doctor.'. If fit, the next steps are 'Prepare Equipment / Medication', 'Prepare Patient', and 'Perform the Procedure'. This is followed by another decision diamond 'Complication'. If there is a complication, the workflow proceeds to 'Refer to Doctor.'. If no complication, the steps are 'Health Education', 'Documentation', and finally 'End Task'. The 'Refer to Doctor.' box has arrows pointing to both the 'Fit for Procedure' and 'Complication' diamonds, and an arrow pointing to the 'End Task' oval.</p> |

| WORK INSTRUCTION  |   |   |   |
|---|---|---|---|
| ACTIVITY  | WORK PROCESS  | STANDARD  | REQUIREMENT   |
| Receive Patient   | <ul style="list-style-type: none"> <li>• Register patient details in the patient record book."</li> </ul>   | Malaysian Patient Safety Goal 2.0 (MPSG)                        | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Referral letter.</li> <li>• Record book / census</li> </ul>   |
| Assess / Verify Patient / Correct Site / Allergy status | <ul style="list-style-type: none"> <li>• Verify the correct patient.</li> <li>• Verify the correct site.</li> <li>• Verify the correct procedure.</li> <li>• Provide a brief history of the nature of the injury.</li> <li>• Ensure that verbal consent has been obtained.</li> </ul>     | <i>Manual Arahan Kerja</i><br>Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> </ul>   |
| Prepare Instruments / Equipment / Medication            | <ul style="list-style-type: none"> <li>• Prepare a complete irrigation set.</li> <li>• Prepare irrigation solution</li> <br/> <li>• Prepare supplementary instruments.</li> <br/> <li>• Verify the correctness of the medication.</li> <li>• Check the medication expiry date.</li> </ul> |   | <ul style="list-style-type: none"> <li>• pH paper</li> <li>• Sodium chloride drip 0.9%</li> <li>• Gauze</li> <li>• Orange stick</li> <li>• Supplementary instruments               <ol style="list-style-type: none"> <li>i. Lid speculum</li> <li>ii. Kidney dish</li> </ol> </li> <li>• Disposable items               <ol style="list-style-type: none"> <li>i. Glove</li> <li>ii. OT cap</li> <li>iii. Drip set and stand.</li> </ol> </li> <li>• Medication               <ol style="list-style-type: none"> <li>i. Topical Anaesthesia</li> </ol> </li> </ul> |

|                       |   |                            |   |
|-----------------------|---|----------------------------|---|
| Prepare Patient       | <ul style="list-style-type: none"> <li>• Verify the patient.</li> <li>• Provide information about the procedure.</li> <li>• Position supine on the table.</li> <li>• Instill topical anesthesia.</li> <li>• Assistant holds a kidney dish.</li> <li>• Chaperone assistance if needed.</li> </ul>  | <i>Manual Arahan Kerja</i> | <ul style="list-style-type: none"> <li>• Patient record book</li> <li>• Topical anesthesia eye drop</li> </ul>  |
| Perform the Procedure | <ul style="list-style-type: none"> <li>• Brief the patient about the procedure.</li> <li>• Instruct eye movements during irrigation.</li> </ul> <p><u>Steps Performed</u></p> <ol style="list-style-type: none"> <li>1) Check the pH of both eyes.</li> <li>2) Open the eye (use an eye speculum if available).</li> <li>3) Stand on the affected side and irrigate the eye.</li> <li>4) Direct fluid flow from inner to outer canthus.</li> <li>5) Instruct eye movements: up, down, right, left during irrigation.</li> </ol> | <i>Manual Arahan Kerja</i> | <ul style="list-style-type: none"> <li>• Drip set and stand</li> <li>• Lid speculum</li> <li>• Normal saline</li> </ul> <p><u>Items</u></p> <ul style="list-style-type: none"> <li>• pH paper @ litmus paper</li> <li>• Lid speculum</li> <li>• Drip set and normal saline 0.9%.</li> </ul> |

|                  |  |                            |   |
|------------------|--|----------------------------|---|
|                  | <p>6) Evert upper and lower lids to clean lodged particles.</p> <p>7) Remove solid particles using a cotton bud/eye sponge (conjunctiva and lid only).</p> <p>8) Clean the eye with moist gauze.</p> <p>9) Irrigate with 2 pints of normal saline.</p> <p>10) Repeat checking pH 10 minutes post-irrigation.</p> <p>11) Repeat irrigation for abnormal pH.</p> <p>12) Repeat procedure on the other eye.</p> |                            | <ul style="list-style-type: none"> <li>• Cotton ball/eye sponge</li> <li>• Wet gauze</li> <li>• Normal saline 0.9%</li> <li>• pH paper</li> <li>• Normal saline 0.9%</li> </ul> |
| Health Education | <ul style="list-style-type: none"> <li>• Advise the patient not to rub the eye.</li> <li>• Wait to see the doctor.</li> <li>• Take medication.</li> </ul>  |                            |   |
| Documentation    | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>   | <i>Manual Arahan Kerja</i> | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> </ul>  |

## REFERENCE

Bizrah M, Yusuf A, Ahmad S. An update on chemical eye burns. *Eye (Lond)*. 2019 Sep;33(9):1362-1377. doi: 10.1038/s41433-019-0456-5. Epub 2019 May 13. PMID: 31086244; PMCID: PMC7002428.

Stevens S. How to irrigate the eye. *Community Eye Health*. 2016;29(95):56. PMID: 28289322; PMCID: PMC5340106.

Themes, U. (2016, July 21). *Eye irrigation*. Nurse Key. <https://nursekey.com/eye-irrigation/>

| FIRST EYE DRESSING        |  |
|---------------------------|--|
| <b>INTRODUCTION</b>       | Eye dressing is a procedure to clean up the eye after any procedure performed to prevent cross infection from surrounding area.  |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be performed by a privileged Assistant Medical Officer (AMO).</li> <li>• All patient that needs eye dressing procedure.</li> </ul>   |
| <b>SPECIFIC OBJECTIVE</b> | To promote healing and prevent infection.  |
| <b>WORKFLOW</b>           | <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive patient]     Receive --&gt; Assess[Assess / verify patient / correct site / Allergy status]     Assess --&gt; Fit{Fit for Procedure?}     Fit -- No --&gt; Refer[Refer to doctor]     Fit -- Yes --&gt; Equip[Prepare equipment/ medication]     Equip --&gt; Patient[Prepare patient]     Patient --&gt; Perform[Perform the procedure]     Perform --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End           </pre> <p>The flowchart illustrates the workflow for eye dressing. It begins with 'Start Task', followed by 'Receive patient' and 'Assess / verify patient / correct site / Allergy status'. A decision diamond asks 'Fit for Procedure?'. If 'No', the process goes to 'Refer to doctor'. If 'Yes', the process continues through 'Prepare equipment/ medication', 'Prepare patient', 'Perform the procedure', 'Health Education', and 'Documentation', finally reaching 'End Task'. The 'Refer to doctor' step also leads to 'End Task'.</p> |

| WORK INSTRUCTION  |  |   |   |
|---|--|---|---|
| ACTIVITY  | WORK PROCESS   | STANDARD  | REQUIREMENT   |
| Receive Patient   | Register patient particulars in record book  | Malaysian Patient Safety Goal 2.0                                   | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Referral letter.</li> <li>• Record book / census</li> </ul>   |
| Assess / Verify Patient / Correct Site / allergy status | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Verify correct site.</li> <li>• Verify correct procedure.</li> <li>• Ensure verbal consent has been taken</li> </ul>   | <i>Manual Arahan Kerja</i><br><br>Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> </ul>   |
| Prepare equipment/ medication                           | <ul style="list-style-type: none"> <li>• Prepare disposable items</li> <li>• Prepare solutions</li> <li>• Verify medication and expiry date</li> </ul>   | <i>Arahan Kerja manual</i>  | <ul style="list-style-type: none"> <li>• Disposable items:               <ol style="list-style-type: none"> <li>i. Disposable dressing set</li> <li>ii. Sterile glove</li> <li>iii. Eye pad</li> <li>iv. Eye shield</li> </ol> </li> <li>• Solutions               <ol style="list-style-type: none"> <li>i. Normal saline 0.9 %</li> </ol> </li> <li>• Medication               <ol style="list-style-type: none"> <li>i. Topical Antibiotics</li> </ol> </li> </ul> |
| Prepare Patient   | <ul style="list-style-type: none"> <li>• Verify correct patient</li> <li>• Inform the patient about the procedure.</li> <li>• Position patient</li> </ul>  | <i>Manual Arahan Kerja</i>  | <ul style="list-style-type: none"> <li>• Patient record</li> </ul>  |
| Perform the Procedure                                   | <ul style="list-style-type: none"> <li>• Ask patient permission to start.</li> </ul> <u>Steps Performed</u> <ol style="list-style-type: none"> <li>1) Explain the purpose and the procedure to patient.</li> <li>2) Place the patient in the required position</li> <li>3) Wash and dry hands</li> </ol> | <i>Arahan Kerja manual</i>  |   |

|  |  |  |  |
|--|--|--|--|
|  | <ol style="list-style-type: none"> <li>4) Assistant to open the sterile dressing packs and pour sterile Sodium Chloride 0.9% solution</li> <li>5) Prepare cotton ball swabs by soaking it in sterile Sodium Chloride 0.9% Solution</li> <li>6) Instruct patient to close both eyes</li> <li>7) Gently swab the lid starting from the medial canthus and move towards lateral canthus with one stroke</li> <li>8) Using a new cotton ball swab each time once only until all discharge has been removed</li> <li>9) Instruct patient to open the eyelids and look up</li> <li>10) Gently swab the lower lid in same manner starting from the medial canthus</li> <li>11) Instruct patient to look down and repeat procedure for upper eye lid</li> <li>12) Examine the eyes under adequate lighting.</li> <li>13) Instil eye drops/ ointment as ordered by doctor.</li> </ol> |  | <ul style="list-style-type: none"> <li>• Disposable dressing set and Normal Saline 0.9 %</li> <li>• Sterile Cotton ball</li> <li>• Sterile Cotton ball</li> <li>• Topical Antibiotics</li> <li>• Eye pad and eye shield</li> </ul> |
|--|--|--|--|

|                  |  |                                   |                          |
|------------------|--|-----------------------------------|--------------------------|
|                  | 14) Apply eye pad / shield if indicated<br>15) Clean the instrument/ trolley used for procedure<br>16) Wash and dry hands  |                                   |                          |
| Health education | <ul style="list-style-type: none"> <li>Wound care – observe any bleeding / inflammation / sign of infection.</li> <li>Clinic TCA – gentle reminder to patient as to follow post- op</li> </ul> | Malaysian Patient Safety Goal 2.0 | Appointment card.        |
| Documentation    | Record procedure   | <i>Manual Arahan Kerja</i>        | Procedure book / census. |

#### REFERENCE

Shaw, M. E., Lee, A., & Stollery, R. (2013). *Ophthalmic Nursing*. John Wiley & Sons.

Stevens, S. (2016). Cleaning and dressing the eye after surgery. *Community Eye Health*, 29(94), 36. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5100474/>

Antwi-Boasiako, S. (2020). *Ophthalmic nurses: vital team members in the push for better eye health*. PubMed Central (PMC). <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8115702/>

**SUTURE TO OPEN (STO) EYELID**

|                           |   |
|---------------------------|---|
| <b>INTRODUCTION</b>       | Suture to Open (STO) is a procedure for the removal of sutures using Iris scissors and Adson forceps.   |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be performed by a privileged Assistant Medical Officer (AMO).</li> <li>• All patient requiring to remove eyelid suture.</li> </ul>  |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• To remove suture from a healed wound without damaging newly formed tissue.</li> </ul>  |
| <b>WORKFLOW</b>           | <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive patient]     Receive --&gt; Assess[Assess / verify patient / correct site]     Assess --&gt; Fit{Fit for Procedure?}     Fit -- No --&gt; Refer[Refer to doctor]     Fit -- Yes --&gt; PrepareInst[Prepare instruments / equipment]     PrepareInst --&gt; PreparePat[Prepare patient]     PreparePat --&gt; Perform[Perform the procedure]     Perform --&gt; Clean[Cleaning and Sterilization of Microsurgical Instruments]     Clean --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End   </pre> |

| <b>WORK INSTRUCTION</b>                                 |  |   |  |
|---|--|---|--|
| <b>ACTIVITY</b>   | <b>WORK PROCESS</b>  | <b>STANDARD</b>   | <b>REQUIREMENT</b>   |
| Receive Patient   | <ul style="list-style-type: none"> <li>• Register patient particulars in patient's record book</li> </ul>  | Malaysian Patient Safety Goal 2.0                                   | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Referral letter</li> <li>• Record book / census</li> </ul>   |
| Assess / Verify Patient / Correct Site / Allergy status | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Verify correct site.</li> <li>• Verify correct procedure.</li> <li>• Ensure verbal consent has been taken.</li> </ul>                                | <i>Manual Arahan Kerja</i><br><br>Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> </ul>  |
| Prepare Instruments / Equipment /                       | <ul style="list-style-type: none"> <li>• Prepare complete Dressing set</li> <li>• Prepare disposable item</li> <li>• Prepare solutions</li> <li>• Verify correct medication.</li> <li>• Check medication expiry date.</li> </ul> |   | <ul style="list-style-type: none"> <li>• Dressing Set               <ol style="list-style-type: none"> <li>i. Iris Scissors</li> <li>ii. Adson forceps</li> </ol> </li> <li>• Disposable items               <ol style="list-style-type: none"> <li>i. Small gauze</li> <li>ii. Cotton swabs</li> <li>iii. Dressing Forceps</li> </ol> </li> <li>• Solutions               <ol style="list-style-type: none"> <li>i. Antiseptic</li> </ol> </li> <li>• Medication               <ol style="list-style-type: none"> <li>i. Topical Anaesthesia</li> </ol> </li> </ul> |
| Prepare Patient   | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Inform the patient about the procedure.</li> <li>• Position patient in supine on the bed.</li> <li>• Chaperon assistance if necessary</li> </ul>     | <i>Manual Arahan Kerja</i>  | <ul style="list-style-type: none"> <li>• Patient record</li> </ul>   |
| Perform the Procedure                                   | <ul style="list-style-type: none"> <li>• Ask patient permission to start.</li> </ul> <p><u>Steps Performed</u><br/>           1) Using Dressing Forceps dip cotton swab into antiseptic solution and clean suture site.</p>      | <i>Manual Arahan Kerja</i>  | <ul style="list-style-type: none"> <li>• Dressing forceps and cotton swab.</li> </ul>  |

|                  |  |                            |  |
|------------------|--|----------------------------|--|
|                  | <ol style="list-style-type: none"> <li>2) Hold the straight scissors in dominant hand and tooth forceps in non-dominant hand</li> <li>3) Grasp knot of suture with forceps and gently pull up knot while slipping the tip of the scissors under suture near the skin.</li> <li>4) Examine the knot.</li> <li>5) Cut under the knot as close as possible to the skin at the distal end of the knot.</li> <li>6) Grasp knotted end with forceps, and in one continuous action pull suture out of the tissue and place cut knot on gauze.</li> <li>7) Repeat the step until every suture is removed.</li> </ol> |                            | <ul style="list-style-type: none"> <li>• straight scissors and tooth forceps.</li> <br/> <li>• straight scissors</li> <br/> <li>• tooth forceps</li> </ul> |
| Health Education | <ul style="list-style-type: none"> <li>• Observe side effects / complications</li> <li>• Emphasize on follow up compliance</li> </ul>  |                            |  |
| Documentation    | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>   | <i>Manual Arahan Kerja</i> | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> </ul>   |

## REFERENCES

- Moe, K. S. (2017). *Trauma in Facial Plastic Surgery, An Issue of Facial Plastic Surgery Clinics of North America, E-Book*. Elsevier Health Sciences.
- Yan, H. (2020). *Sports-related Eye Injuries*. Springer Nature.
- Yanoff, M., & Duker, J. S. (2022). *Ophthalmology, E-Book*. Elsevier Health Sciences.

### APPLICATION OF EYE PAD AND EYE SHIELD

|                           |  |
|---------------------------|--|
| <b>INTRODUCTION</b>       | Eye pad or eye shield is used to protect the eye from any trauma or accidentally touching the eye.   |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>The procedure will be performed by a privileged Assistant Medical Officer (AMO).</li> <li>All patient who needs eye pad and eye shield</li> </ul>   |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>To prevent eye blinking.</li> <li>To promote cornea wound epithelial healing.</li> </ul>  |
| <b>WORKFLOW</b>           | <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive patient]     Receive --&gt; Assess[Assess / verify patient / correct site / allergy status]     Assess --&gt; Fit{Fit for Procedure?}     Fit -- No --&gt; Refer[Refer to doctor]     Fit -- Yes --&gt; Equip[Prepare equipment/ medication]     Equip --&gt; Patient[Prepare patient]     Patient --&gt; Perform[Perform the procedure]     Perform --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End           </pre> <p>The flowchart details the following steps: Start Task (oval), Receive patient (rectangle), Assess / verify patient / correct site / allergy status (rectangle), Fit for Procedure? (diamond decision), Prepare equipment/ medication (rectangle), Prepare patient (rectangle), Perform the procedure (rectangle), Health Education (rectangle), Documentation (rectangle), End Task (oval), and Refer to doctor (rectangle). The 'No' path from the decision diamond leads to 'Refer to doctor', which then joins the 'Yes' path before reaching 'End Task'.</p> |

| <b>WORK INSTRUCTION</b>                                 |  |   |   |
|---|--|---|---|
| <b>ACTIVITY</b>   | <b>WORK PROCESS</b>  | <b>STANDARD</b>   | <b>REQUIREMENT</b>  |
| Receive Patient   | <ul style="list-style-type: none"> <li>• Register patient particulars in record book</li> </ul>  | Malaysian Patient Safety Goal 2.0                               | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Record book / census</li> </ul>   |
| Assess / Verify Patient / Correct Site / Allergy status | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Verify correct site.</li> <li>• Verify correct procedure.</li> <li>• Ensure verbal consent has been taken.</li> </ul>    | <i>Manual Arahan Kerja</i><br>Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> </ul>   |
| Prepare Equipment / Medication                          | <ul style="list-style-type: none"> <li>• Prepare disposable items</li> <br/> <li>• Prepare solutions</li> <br/> <li>• Verify correct medication.</li> <li>• Check medication expiry date.</li> </ul> | <i>Arahan Kerja manual</i>                                      | <ul style="list-style-type: none"> <li>• Disposable item               <ol style="list-style-type: none"> <li>Disposable dressing set</li> <li>Eye Pads</li> <li>Eye Shield</li> <li>Micro pore tape</li> </ol> </li> <br/> <li>• Solution               <ol style="list-style-type: none"> <li>Normal saline 0.9%</li> </ol> </li> <br/> <li>• Topical / Ointment Antibiotics</li> </ul> |
| Prepare Patient   | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Inform the patient about the procedure.</li> <li>• Position patient comfortably.</li> </ul>                              | <i>Manual Arahan Kerja</i><br>Malaysian Patient Safety goal 2.0 | <ul style="list-style-type: none"> <li>• Patient record</li> </ul>  |
| Perform the Procedure                                   | <ul style="list-style-type: none"> <li>• Ask patient permission to start.</li> </ul> <p><u>Steps Performed</u></p>   | <i>Manual Arahan Kerja</i>                                      | <ul style="list-style-type: none"> <li>• Disposable dressing set</li> </ul>   |

|                  |   |                            |   |
|------------------|---|----------------------------|---|
|                  | 1) Refer eye dressing Standard Practice Guidelines (SPG)<br>2) In cases of trauma, do not touch the eye; tape the eye shield on the effected eye with micropore |                            | <ul style="list-style-type: none"> <li>• Eye Pads, Eye Shield and Micropore tape</li> </ul> |
| Health Education | <ul style="list-style-type: none"> <li>• Observe side effects / complications</li> </ul>  |                            |   |
| Documentation    | Record procedure  | <i>Manual Arahan Kerja</i> | Procedure book / census.  |

#### REFERENCE

- Antwi-Boasiako, S. (2020). *Ophthalmic nurses: vital team members in the push for better eye health*. PubMed Central (PMC). <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8115702/>
- Stevens, S. (2010, December 1). *How to apply an eye pad, shield, and bandage*. PubMed Central (PMC). <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3033618/>
- Stevens, S. (2016). *Cleaning and dressing the eye after surgery*. PubMed Central (PMC). <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5100474/>

**COLOUR FUNDUS PHOTOGRAPHY**

|                           |  |
|---------------------------|--|
| <b>INTRODUCTION</b>       | Colour fundus photography is a procedure to capture the images of the retina and optic nerve using the fundus camera.  |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be performed by privileged Assistant Medical Officer (AMO).</li> <li>• All patient indicated for colour fundus photography.</li> </ul>   |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• To document ocular disease conditions.</li> <li>• Monitoring progression of the disease.</li> <li>• To aid in disease counselling.</li> <li>• For the clinical research cases.</li> </ul>   |
| <b>WORKFLOW</b>           | <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive patient]     Receive --&gt; Assess[Assess / verify patient / correct site / Allergy status]     Assess --&gt; Fit{Fit for Procedure?}     Fit -- Yes --&gt; Equip[Prepare equipment/ medication]     Equip --&gt; Patient[Prepare patient]     Patient --&gt; Perform[Perform the procedure]     Perform --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Fit -- No --&gt; Refer[Refer to doctor]     Refer --&gt; End   </pre> |

| <b>WORK INSTRUCTION</b>                                 |  |                                   |   |
|---|--|-----------------------------------|---|
| <b>ACTIVITY</b>   | <b>WORK PROCESS</b>  | <b>STANDARD</b>                   | <b>REQUIREMENT</b>  |
| Receive Patient   | <ul style="list-style-type: none"> <li>• Register patient particulars in patient's record book</li> </ul>  | Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Referral letter.</li> <li>• Record book / census</li> </ul>   |
| Assess / Verify Patient / Correct Site / Allergy status | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Verify correct site.</li> <li>• Verify correct procedure.</li> <li>• Review photographic request, confirm area of interest.</li> <li>• Explain to the patient the indication of the procedure.</li> <li>• Ensure verbal consent has been taken.</li> </ul>                                 | Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Patient appointment card</li> <li>• Referral letter</li> </ul>   |
| Prepare Instruments / Equipment / Medication            | <ul style="list-style-type: none"> <li>• Verify correct medication.</li> <li>• Check medication expiry date.</li> <li>• Make sure fundus camera works perfectly.</li> <li>• Enter patient demographic information into capture software.</li> <li>• Set eyepiece for accommodative correction.</li> <li>• Set viewing angle, flash power and viewing light.</li> </ul> |                                   | <ul style="list-style-type: none"> <li>• Medication               <ol style="list-style-type: none"> <li>i. Topical anaesthesia eye drops if indicated.</li> <li>ii. Dilating eye drops if indicated.</li> </ol> </li> <li>• Fundus camera</li> <li>• Patient appointment card</li> </ul> |

|                       |   |                             |   |
|-----------------------|---|-----------------------------|---|
| Prepare Patient       | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Confirm adequate dilation if indicated.</li> <li>• Inform the patient about the procedure.</li> <li>• Position patient's head on headrest for photography.</li> <li>• Dim the light if necessary.</li> <li>• Chaperon assistance if necessary.</li> </ul>   | <i>Manual Arahana Kerja</i> | <ul style="list-style-type: none"> <li>• Patient appointment card</li> <li>• Dilating eye drop</li> </ul> |
| Perform the Procedure | <ul style="list-style-type: none"> <li>• Ask patient permission to start.</li> </ul> <p><u>Steps Perform</u></p> <ol style="list-style-type: none"> <li>1) Establish fixation with external or internal fixation device.</li> <li>2) Use joystick to align illumination beam within pupil.</li> <li>3) Focus on designated field of view.</li> <li>4) Take colour photographs of required area of interest.</li> <li>5) Use lateral shift of joystick to obtain sequential stereo pairs.</li> <li>6) Review images for quality, correct artifacts and adjust settings accordingly.</li> </ol> | <i>Manual Arahana Kerja</i> | <ul style="list-style-type: none"> <li>• Fundus camera.</li> </ul>  |
| Health Education      | <ul style="list-style-type: none"> <li>• Care of metabolic disease.</li> </ul>  |                             |   |

|               |   |  |  |
|---------------|---|--|--|
|               | <ul style="list-style-type: none"> <li>i. Compliance to medication.</li> <li>ii. Compliance of follow up.</li> <li>iii. Compliance to treatment.</li> </ul> |  |  |
| Documentation | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>  |  | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> </ul> |

## REFERENCES

Color Fundus Photography | Department of Ophthalmology. (2019). Med.ubc.ca.  
<https://ophthalmology.med.ubc.ca/patient-care/ophthalmic-photography/color-fundus-photography/>

Fundus Photography Overview - Ophthalmic Photographers' Society. (2011).  
 Www.opsweb.org. <https://www.opsweb.org/page/fundusphotography>

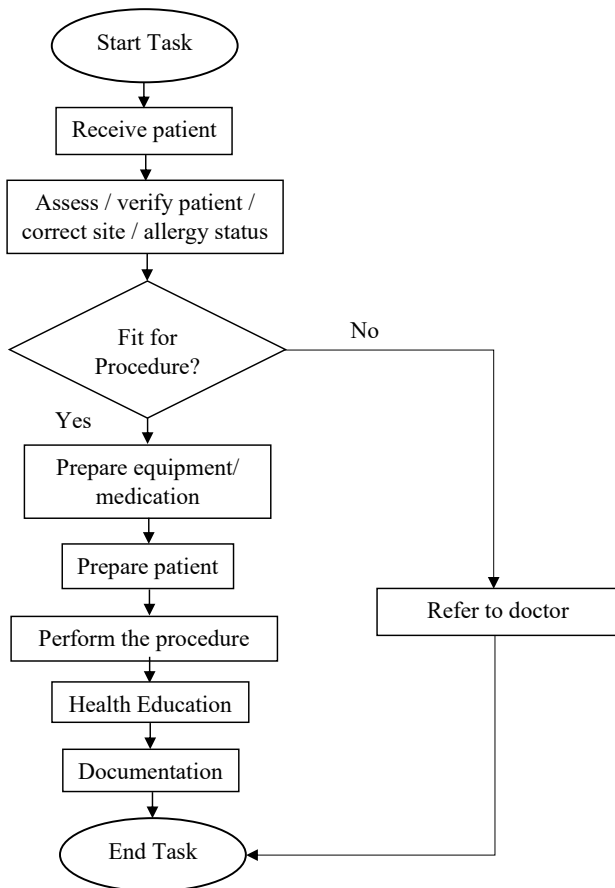
Mishra, C., & Tripathy, K. (2022). Fundus Camera. PubMed; StatPearls Publishing.  
<https://www.ncbi.nlm.nih.gov/books/NBK585111/>

NATIONAL HEALTH AND NUTRITION EXAMINATION SURVEY III Fundus  
 Photography for Health Technicians Manual. (1989). Retrieved May 29, 2023, from  
<https://wwwn.cdc.gov/nchs/data/nhanes3/manuals/fundus.pdf>

## OPTICAL COHERENCE TOMOGRAPHY (OCT), OPTICAL COHERENCE TOMOGRAPHY ANGIOGRAPHY (OCTA) IMAGING

|                           |  |
|---------------------------|--|
| <b>INTRODUCTION</b>       | <ul style="list-style-type: none"> <li>• Optical Coherence Tomography (OCT) is a non-invasive imaging technology used to obtain high resolution cross-sectional images of the retina. OCT uses rays of light to measure retinal thickness.</li> <li>• Optical coherence tomography angiography (OCTA) can image the retinal vasculature in vivo, without the need for contrast dye. OCTA was developed as an extension of OCT imaging. OCTA technology utilizes motion contrast to detect blood flow and has the unique ability among retinovascular imaging modalities to individually visualize each retinal plexus.</li> <li>• Retinal Nerve Fibre Layer (RNFL) analysis is an essential part of the glaucoma evaluation. The RNFL thickness is calculated as the distance between the internal limiting membrane and the outer boundary of the RNFL. RNFL analysis plays a major role in glaucoma management, allowing for earlier treatment to reduce the risk of vision loss.</li> </ul> |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be performed by a privileged Assistant Medical Officer (AMO).</li> <li>• All patients requiring the procedure for diagnosis, monitoring of disease progression and quantifying response to treatment.</li> </ul>   |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• To quantifying response to treatment.</li> <li>• To identify the abnormalities of the structure of the retina.</li> <li>• To measure retinal thickness.</li> <li>• To analyse the retinal nerve fibre layers.</li> <li>• To evaluate disorder of optic nerve.</li> <li>• To evaluate the anatomy of specific vascular layers of the retina.</li> </ul>  |
|                           |  |

## WORKFLOW



| WORK INSTRUCTION  |  |                                   |  |
|---|--|-----------------------------------|--|
| ACTIVITY  | WORK PROCESS   | STANDARD                          | REQUIREMENT  |
| Receive Patient   | <ul style="list-style-type: none"> <li>• Register patient particulars in record book</li> </ul>  | Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Referral letter.</li> </ul>  |
| Assess / Verify Patient / Correct Site / Allergy status | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Verify correct site.</li> <li>• Verify correct procedure.</li> <li>• Review photographic request, confirm area of interest.</li> <li>• Explain to the patient the indication of the procedure.</li> <li>• Ensure verbal consent has been taken.</li> </ul> | Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Patient appointment card</li> <li>• Referral letter</li> </ul>  |
| Prepare Instruments / Equipment / Medication            | <ul style="list-style-type: none"> <li>• Verify correct medication.</li> <li>• Check medication expiry date.</li> <li>• Make sure OCT machine works perfectly.</li> <li>• Select correct lens.</li> <li>• Enter patient demographic information into capture software.</li> </ul>  |                                   | <ul style="list-style-type: none"> <li>• Medication               <ol style="list-style-type: none"> <li>i. Topical anaesthesia eye drop</li> <li>ii. Dilating eye drops.</li> </ol> </li> <li>• OCT machine</li> <li>• Patient appointment card.</li> </ul> |
| Prepare Patient   | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Confirm adequate dilatation.</li> <li>• Inform the patient about the procedure.</li> </ul>   | <i>Manual Arahan Kerja</i>        | <ul style="list-style-type: none"> <li>• Patient appointment card.</li> <li>• Dilating eye drop</li> </ul>   |

|                       |  |                             |  |
|-----------------------|--|-----------------------------|--|
|                       | <ul style="list-style-type: none"> <li>• Position patient's head on the headrest.</li> </ul>   |                             |  |
| Perform the Procedure | <ul style="list-style-type: none"> <li>• Ask patient permission to start.</li> </ul> <p><u>Steps Perform</u></p> <ol style="list-style-type: none"> <li>1) Choose settings as per required OCT / RNFL / optic nerve head, macula / anterior segment / OCTA.</li> <li>2) Establish fixation with external or internal fixation device.</li> <li>3) Align illumination beam within pupil (manual/automated).</li> <li>4) Focus on designated field of view.</li> <li>5) Use astigmatic correction device if available/needed.</li> <li>6) Capture images as required.</li> <li>7) Review images for quality, correct artifacts and adjust settings accordingly.</li> </ol> | <i>Manual Arahkan Kerja</i> | <ul style="list-style-type: none"> <li>• OCT camera</li> </ul>               |
| Health Education      | <ul style="list-style-type: none"> <li>• Care of metabolic disease.             <ol style="list-style-type: none"> <li>i. Compliance to medication.</li> <li>ii. Compliance of follow up.</li> <li>iii. Compliance to treatment.</li> </ol> </li> </ul>  |                             |  |
| Documentation         | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>   |                             | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> </ul> |

**REFERENCES**

- Greig, E. C., Duker, J. S., & Waheed, N. K. (2020). A practical guide to optical coherence tomography angiography interpretation. *International Journal of Retina and Vitreous*, 6(1). <https://doi.org/10.1186/s40942-020-00262-9>
- Aumann, S., Donner, S., Fischer, J., & Müller, F. (2019). Optical Coherence Tomography (OCT): Principle and Technical Realization. *High Resolution Imaging in Microscopy and Ophthalmology*, 59–85. [https://doi.org/10.1007/978-3-030-16638-0\\_3](https://doi.org/10.1007/978-3-030-16638-0_3)
- Gao, S. S., Jia, Y., Zhang, M., Su, J. P., Liu, G., Hwang, T. S., Bailey, S. T., & Huang, D. (2016). Optical Coherence Tomography Angiography. *Investigative Ophthalmology & Visual Science*, 57(9), OCT27–OCT36. <https://doi.org/10.1167/iovs.15-19043>
- Optical Coherence Tomography | Department of Ophthalmology. (2018). *Ophthalmology.med.ubc.ca*. <https://ophthalmology.med.ubc.ca/patient-care/ophthalmic-photography/optical-coherence-tomography/>
- v. Retinal OCT Imaging - Ophthalmic Photographers' Society. (2019). *Www.opsweb.org*. Retrieved May 30, 2023, from <https://www.opsweb.org/page/RetinalOCT>

**INDOCYANINE GREEN ANGIOGRAPHY (ICGA)**

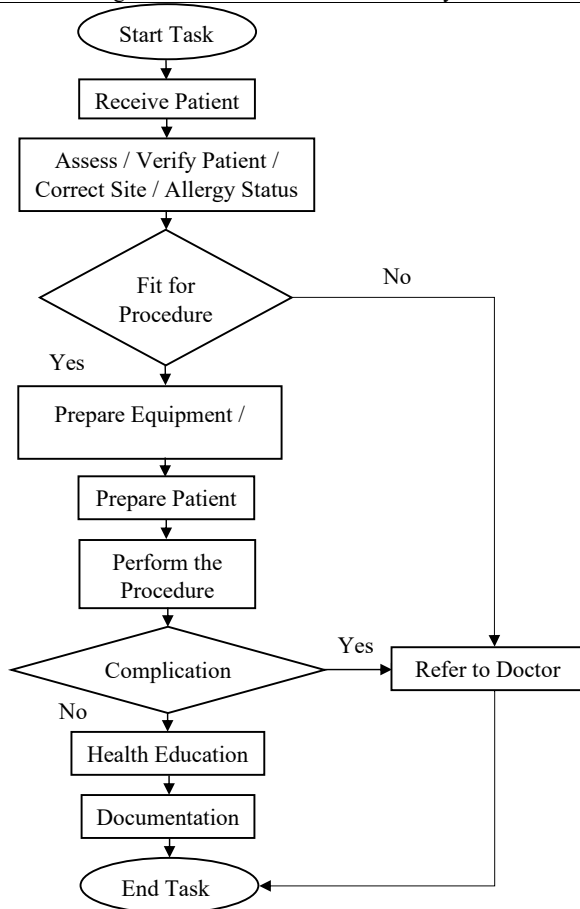
**INTRODUCTION** Indocyanine Green Angiography (ICGA) is an invasive diagnostic procedure that uses Indocyanine Green (ICG) dye to examine the blood flow in the choroid, the layer of blood vessels which lies underneath the retina. ICG dye is injected into a vein in the arm/hand. As the dye passes through the blood vessels of the eye, photographs are taken to record the blood flow.

**SCOPE**

- The procedure will be performed by a privileged Assistant Medical Officer (AMO).
- All patients indicated for the procedure.

**SPECIFIC OBJECTIVE**

- To identify abnormality of choroidal circulation
- To identify polypoidal vasculopathy.
- To identify pachychoroid abnormality.
- To aid in the diagnosis of chorioretinal inflammatory disease.

**WORKFLOW**

| <b>WORK INSTRUCTION</b>                                 |   |                                   |   |
|---|---|-----------------------------------|---|
| <b>ACTIVITY</b>   | <b>WORK PROCESS</b>   | <b>STANDARD</b>                   | <b>REQUIREMENT</b>  |
| Receive Patient   | <ul style="list-style-type: none"> <li>• Register patient particulars in patient's record book</li> </ul>   | Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Referral letter.</li> <li>• Record book / census</li> </ul>   |
| Assess / Verify Patient / Correct Site / Allergy status | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Verify correct site.</li> <li>• Verify correct procedure.</li> <li>• Verify allergy status.</li> <li>• Verify pregnancy status (female).</li> <li>• Verify underlying liver diseases.</li> <li>• Review photographic request, confirm area of interest.</li> <li>• Ensure written consent has been taken.</li> <li>• Explain to the patient the indication of the procedure.</li> </ul> | Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Signed consent form</li> </ul>  |
| Prepare Equipment / Dye / Medication                    | <ul style="list-style-type: none"> <li>• Verify correct medication.</li> <li>• Check medication expiry date.</li> <li>• Verify correct dye.</li> <li>• Check dye expiry date.</li> <li>• Prepare disposable items.</li> </ul>   |                                   | <ul style="list-style-type: none"> <li>• Medication               <ol style="list-style-type: none"> <li>Topical anaesthesia eye drop.</li> <li>Dilating eye drop.</li> </ol> </li> <li>• Indocyanine Green (ICG) for Injection USP 25mg</li> <li>• Disposable items               <ol style="list-style-type: none"> <li>5ml syringe.</li> <li>Needle 21G.</li> <li>Sterile water for injection.</li> <li>Syringe filter (0.2 micron)</li> </ol> </li> </ul> |

|                 |   |                            |  |
|-----------------|---|----------------------------|--|
|                 | <ul style="list-style-type: none"> <li>• Make sure angiographic machine works perfectly.</li> <li>• Select correct lens.</li> <li>• Enter patient demographic information into capture software.</li> </ul> <p><u>ICG Preparation Step</u></p> <ol style="list-style-type: none"> <li>1) Reconstitute with 5ml of sterile water for injection.</li> <li>2) Shake well at least for 3 minutes.</li> <li>3) Withdrawn the constituents from the vial through sterile syringe filter (0.2 micron)</li> </ol> |                            | <ul style="list-style-type: none"> <li>• Retinal angiographic machine.</li> <li>• Preferred camera lens.</li> <li>• Patient appointment card / record</li> </ul> |
| Prepare Patient | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Confirm adequate dilatation.</li> <li>• Ensure functioning peripheral intravenous line.</li> <li>• Inform patient of procedures, dye to be administered, and potential side effects.</li> <li>• Position patient’s head on the headrest</li> <li>• Position patient for procedure with arm extended.</li> </ul>   | <i>Manual Arahan Kerja</i> | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Dilating eye drop.</li> <li>• Intravenous cannula 18G-20G.</li> </ul>      |

|                              |  |  |   |
|------------------------------|--|--|---|
| <p>Perform the Procedure</p> | <ul style="list-style-type: none"> <li>• Ask patient permission to start.</li> </ul> <p><u>Steps Performed</u></p> <ol style="list-style-type: none"> <li>1) Adjust settings for ICGA.</li> <li>2) Engage exciter and barrier filters.</li> <li>3) Set flash power.</li> <li>4) Establish fixation with external or internal fixation device.</li> <li>5) Use joystick to align illumination beam within pupil of eye of interest.</li> <li>6) Focus on designated field of view.</li> <li>7) Begin to inject the ICG dye.</li> <li>8) Start timer concurrent with the administration of ICG dye.</li> <li>9) Begin pre-planned photographic sequence.</li> <li>10) Early transit capture rate of one frame per second of posterior pole or area of interest until about 40 seconds.</li> <li>11) Use lateral shift of joystick to obtain sequential stereo pairs.</li> <li>12) Capture posterior pole photos of fellow eye.</li> <li>13) Follow with peripheral survey fields of transit eye if necessary.</li> </ol> | <p><i>Manual Arahannya</i><br/><i>Kerjanya</i></p> | <ul style="list-style-type: none"> <li>• Retina angiographic machine</li> <li>• Preferred camera lens.</li> <li>• 2-5ml ICG dye.</li> </ul> |
|------------------------------|--|--|---|

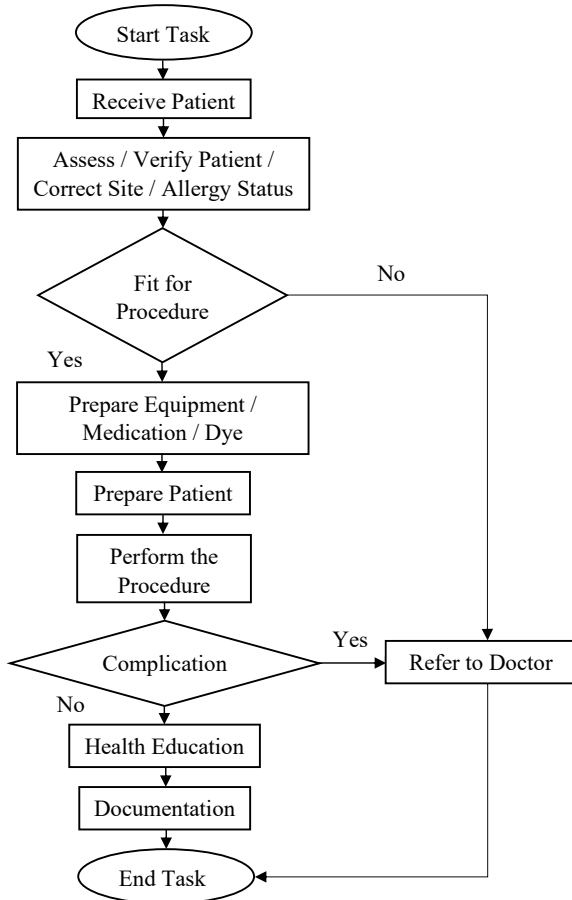
|                  |  |  |  |
|------------------|--|--|--|
|                  | <p>14) Monitor and assess the patient's response to the procedure.</p> <p>15) Perform mid-phase photographs of posterior pole at 2-4 minutes post injection.</p> <p>16) Perform late phase photographs up to 30 minutes post injection, increase flash setting or camera gain settings for adequate late exposure.</p> |  |  |
| Health Education | <ul style="list-style-type: none"> <li>• Observe side effects or discoloration of skin especially on injection site.</li> <li>• Advise patient to go to emergency department immediately if any complication occurs</li> </ul>   |  |  |
| Documentation    | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>   |  | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> </ul> |

## REFERENCES

- Indocyanine Green Angiography | Department of Ophthalmology. (2019). Ophthalmology.med.ubc.ca. <https://ophthalmology.med.ubc.ca/patient-care/ophthalmic-photography/indocyanine-green-angiography/>
- ICG Angiography - Ophthalmic Photographers' Society. (2020). Wwww.opsweb.org. <https://www.opsweb.org/page/ICG>
- Indocyanine Green Angiography | Department of Ophthalmology and Visual Sciences. (2018). Medicine.uiowa.edu. <https://medicine.uiowa.edu/eye/patient-care/imaging-services/indocyanine-green-angiography>
- Muraleedharan, S., & Tripathy, K. (2022). Indocyanine Green (ICG) Angiography. PubMed; StatPearls Publishing. <https://www.ncbi.nlm.nih.gov/books/NBK580479/>

| <b>FUNDUS FLUORESCEIN ANGIOGRAPHY (FFA)</b> |  |
|---|--|
| <b>INTRODUCTION</b>                         | Fundus Fluorescein Angiography (FFA) is an invasive procedure for examining the circulation of retina blood flow. Fluorescein dye is injected into a vein in the arm/hand. As dye passes through the blood vessels of the eye, photographs are taken to record the blood flow in the retina.   |
| <b>SCOPE</b>                                | <ul style="list-style-type: none"><li>• The procedure will be performed by privileged Assistant Medical Officer (AMO)</li><li>• All patients indicated for the procedure.</li></ul>  |
| <b>SPECIFIC OBJECTIVE</b>                   | <ul style="list-style-type: none"><li>• To identify abnormality of retina circulation</li><li>• To identify choroidal neovascularisation.</li><li>• To identify retinal vessel abnormality.</li><li>• To identify retina-choroidal inflammatory condition</li><li>• To aid in the diagnosis of chorioretinal inflammatory disease.</li><li>• To monitor the progression of the disease</li><li>• To quantifying response to treatment.</li></ul> |

**WORKFLOW**



**WORK INSTRUCTION**

| ACTIVITY  | WORK PROCESS   | STANDARD                          | REQUIREMENT   |
|---|--|-----------------------------------|---|
| Receive Patient   | <ul style="list-style-type: none"> <li>• Register patient particulars in record book</li> </ul>              | Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Referral letter.</li> <li>• Record book / census</li> </ul> |
| Assess / Verify Patient / Correct Site / Allergy status | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Verify allergy status</li> </ul> | Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Patient appointment card / record.</li> </ul>  |

|  |   |  |   |
|--|---|--|---|
|  | <ul style="list-style-type: none"> <li>• Verify pregnancy status (female).</li> <li>• Verify underlying liver diseases.</li> <li>• Review latest Renal Profile status.</li> <li>• Review photographic request, confirm area of interest.</li> <li>• Ensure written consent has been taken.</li> <li>• Verify correct procedure.</li> <li>• Verify correct site.</li> <li>• Explain to the patient the indication of the procedure.</li> </ul> |  | <ul style="list-style-type: none"> <li>• Signed consent form</li> </ul>   |
| Prepare Instruments / Equipment / Medication / Dye | <ul style="list-style-type: none"> <li>• Make sure emergency trolley and oxygen tank is ready to use.</li> <li>• Prepare Fluorescein dye.</li> <li>• Prepare medication for adverse reaction.</li> <li>• Check dye and medication expiry date.</li> <li>• Prepare disposable items.</li> </ul>  |  | <ul style="list-style-type: none"> <li>• Updated emergency trolley &amp; oxygen tank.</li> <li>• Fluorescein injection USP.</li> <li>• Medication <ul style="list-style-type: none"> <li>i. Topical anaesthesia eye drop</li> <li>ii. Dilating eye drop.</li> <li>iii. Metoclopramide HCL 10mg.</li> <li>iv. Chlorpheniramine Maleate 4mg.</li> <li>v. Hydrocortisone 200mg.</li> </ul> </li> <li>• Disposable items <ul style="list-style-type: none"> <li>i. Intravenous cannula 18-20G.</li> <li>ii. 3ml / 5ml syringe.</li> </ul> </li> </ul> |

|                       |   |                            |   |
|-----------------------|---|----------------------------|---|
|                       | <ul style="list-style-type: none"> <li>• Make sure angiographic machine works perfectly.</li> <li>• Enter patient demographic information into capture software.</li> <li>• Select correct lens.</li> </ul> <p><u>Fluorescein Dye Preparation Step</u><br/>1) Withdraw 2-5ml Fluorescein dye as per needed.</p>   |                            | <p>iii. Needle 21G.<br/>iv. Vomit bowl/bag.</p> <ul style="list-style-type: none"> <li>• Retinal angiographic machine.</li> <li>• Preferred camera lens.</li> </ul> |
| Prepare Patient       | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Confirm adequate dilatation.</li> <li>• Ensure functioning peripheral intravenous line.</li> <li>• Inform patient of procedures, dye to be administered, and potential side effects.</li> <li>• Position patient's head on the headrest</li> <li>• Position patient for procedure with arm extended.</li> </ul> | <i>Manual Arahan Kerja</i> | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Dilating eye drop.</li> <li>• Intravenous cannula 18G-20G.</li> </ul>         |
| Perform the Procedure | <ul style="list-style-type: none"> <li>• Ask patient permission to start.</li> </ul>  | <i>Manual Arahan Kerja</i> |   |

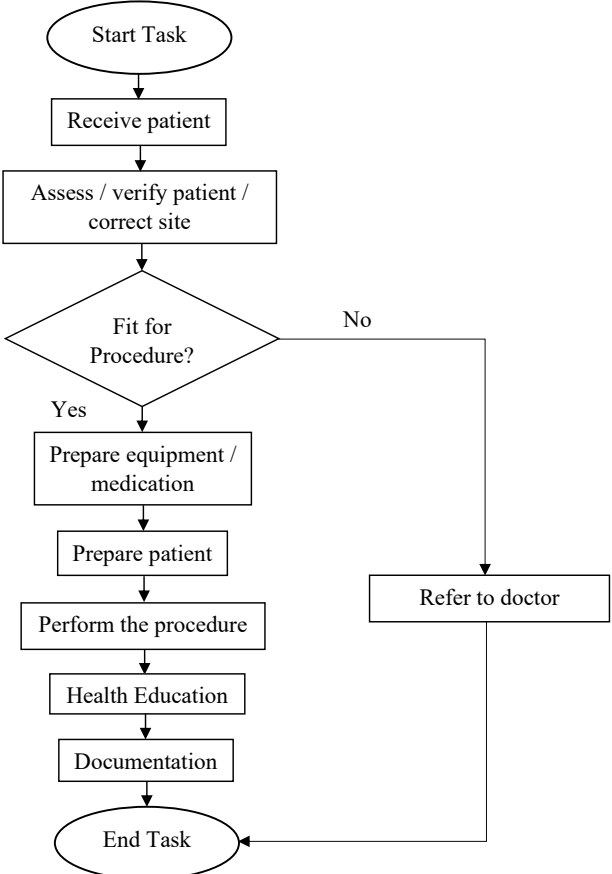
|  |  |  |  |
|--|--|--|--|
|  | <p><u>Steps Performed</u></p> <ol style="list-style-type: none"> <li>1) Adjust settings for fluorescein angiography.</li> <li>2) Engage exciter and barrier filters.</li> <li>3) Set flash power.</li> <li>4) Establish fixation with external or internal fixation device.</li> <li>5) Use joystick to align illumination beam within pupil of eye of interest.</li> <li>6) Focus on designated field of view.</li> <li>7) Begin to inject the fluorescein dye.</li> <li>8) Start timer concurrent with the administration of fluorescein dye.</li> <li>9) Begin pre-planned photographic sequence.</li> <li>10) Early transit capture rate of one frame per second of posterior pole or area of interest until about 40 seconds.</li> <li>11) Use lateral shift of joystick to obtain sequential stereo pairs.</li> <li>12) Capture posterior pole photos of fellow eye.</li> <li>13) Follow with peripheral survey fields of transit eye if necessary.</li> <li>14) Monitor and assess the patient's</li> </ol> |  | <ul style="list-style-type: none"> <li>• Retinal angiographic machine</li> <li>• Preferred camera lens.</li> <br/> <li>• 2-5ml fluorescein dye as per needed.</li> </ul> |
|--|--|--|--|

|                  |  |  |  |
|------------------|--|--|--|
|                  | <p>response to the procedure.</p> <p>15) Respond to any adverse reactions experienced by the patient.</p> <p>16) Perform mid-phase photographs of posterior pole at 2-4 minutes post injection.</p> <p>17) Perform late phase photographs at 7-10 minutes post injection, increase flash setting or camera gain settings for adequate late exposure.</p>                 |  |  |
| Health Education | <ul style="list-style-type: none"> <li>• Urine orange, yellow or red in color is normal within 72 hours.</li> <li>• Observe discoloration of skin especially on injection site.</li> <li>• Monitor side effects such as itchiness, urticaria and bronchospasm.</li> <li>• Advise patient to go to emergency department immediately if any complication occurs</li> </ul> |  |  |
| Documentation    | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>   |  | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> </ul> |

**REFERENCES**

- Fluorescein Angiography | Department of Ophthalmology. (2020). Med.ubc.ca. <https://ophthalmology.med.ubc.ca/patient-care/ophthalmic-photography/fluorescein-angiography/>
- FA Step-by-Step - Ophthalmic Photographers' Society. (2011). Www.opsweb.org. Retrieved May 30, 2023, from <https://www.opsweb.org/page/FAsteps>
- Themes, U. F. O. (2015, December 21). Fluorescein Angiography: Basic Principles and Interpretation. Radiology Key. <https://radiologykey.com/fluorescein-angiography-basic-principles-and-interpretation/>
- Fluorescein Angiography. (2011). Eyedocs. Retrieved May 30, 2023, from <https://www.eyedocs.co.uk/ophthalmology-articles/general/741-fluorescein-angiography>

**INSERTION, REMOVAL AND CARE OF EYE PROSTHESIS**

|                           |  |
|---------------------------|--|
| <b>INTRODUCTION</b>       | The cosmetic appearance of the person who has had an enucleation can be greatly improved by fitting of an artificial eye. An ocular prosthesis, artificial eye or glass eye is a type of craniofacial prosthesis that replaces an absent natural eye following an enucleation, evisceration or orbital exenteration.   |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be performed by a privileged Assistant Medical Officer (AMO).</li> <li>• All patient who using eye prosthesis.</li> </ul>  |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• To educate             <ol style="list-style-type: none"> <li>i. Proper technique of insertion eye prosthesis</li> <li>ii. Proper technique of removal eye prosthesis</li> <li>iii. Proper care of eye prosthesis</li> </ol> </li> </ul>  |
| <b>WORKFLOW</b>           |  <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive patient]     Receive --&gt; Assess[Assess / verify patient / correct site]     Assess --&gt; Fit{Fit for Procedure?}     Fit -- No --&gt; Refer[Refer to doctor]     Fit -- Yes --&gt; Equip[Prepare equipment / medication]     Equip --&gt; Patient[Prepare patient]     Patient --&gt; Perform[Perform the procedure]     Perform --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End             </pre> <p>The flowchart illustrates the workflow for the insertion, removal, and care of an eye prosthesis. It begins with 'Start Task', followed by 'Receive patient', 'Assess / verify patient / correct site', and a decision point 'Fit for Procedure?'. If the patient is not fit, the process leads to 'Refer to doctor'. If fit, the steps are 'Prepare equipment / medication', 'Prepare patient', 'Perform the procedure', 'Health Education', and 'Documentation', all leading to 'End Task'.</p> |

| WORK INSTRUCTION                       |  |   |  |
|--|--|---|--|
| ACTIVITY                               | WORK PROCESS   | STANDARD  | REQUIREMENT  |
| Receive Patient                        | <ul style="list-style-type: none"> <li>• Register patient particulars in record book</li> </ul>  | Malaysian Patient Safety Goal 2.0                                   | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Referral letter, record book / census</li> </ul>   |
| Assess / verify patient / correct site | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Verify correct site.</li> <li>• Verify correct procedure.</li> <li>• Verify allergy status</li> <li>• Explain to the patient the indication of the procedure.</li> <li>• Short history of nature injury.</li> <li>• Ensure verbal consent has been taken.</li> </ul> | <i>Manual Arahan Kerja</i><br>Malaysian Patient Safety Goal 2.0     | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> </ul>  |
| Prepare Equipment / Medication         | <ul style="list-style-type: none"> <li>• Prepare appropriate storage container</li> <li>• Prepare solutions.</li> <li>• Prepare disposable item.</li> <li>• Verify correct eye prosthesis.</li> </ul>  |   | <ul style="list-style-type: none"> <li>• Clean storage container</li> <li>• Solutions               <ol style="list-style-type: none"> <li>i. Antiseptic</li> <li>ii. Sterile water</li> </ol> </li> <li>• Disposable item               <ol style="list-style-type: none"> <li>i. Disposable dressing set</li> </ol> </li> <li>• Boxes of eye prosthesis</li> </ul> |
| Prepare Patient                        | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Inform the patient about the procedure.</li> <li>• Position patient comfortably.</li> </ul>  | Malaysian Patient Safety Goal 2.0<br><br><i>Manual Arahan Kerja</i> | <ul style="list-style-type: none"> <li>• Patient record</li> </ul>   |
| Perform the Procedure                  | <ul style="list-style-type: none"> <li>• Wash hand and gloving.</li> </ul>   | Manual Prosedur Kerja/Arahan Kerja                                  |  |



|               |   |  |  |
|---------------|---|--|--|
|               | <ul style="list-style-type: none"> <li>• Motivate to use the prosthesis all the time</li> <li>• Consider to remove the prosthesis if develop any discharge and eye discomfort</li> <li>• Clean prosthesis when necessary (eye discharge, grittiness sensation)</li> <li>• Seek attention if persistent symptoms (indication for new eye prosthesis or polishing)</li> </ul> |  |  |
| Documentation | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>  |  | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> </ul> |

## REFERENCE

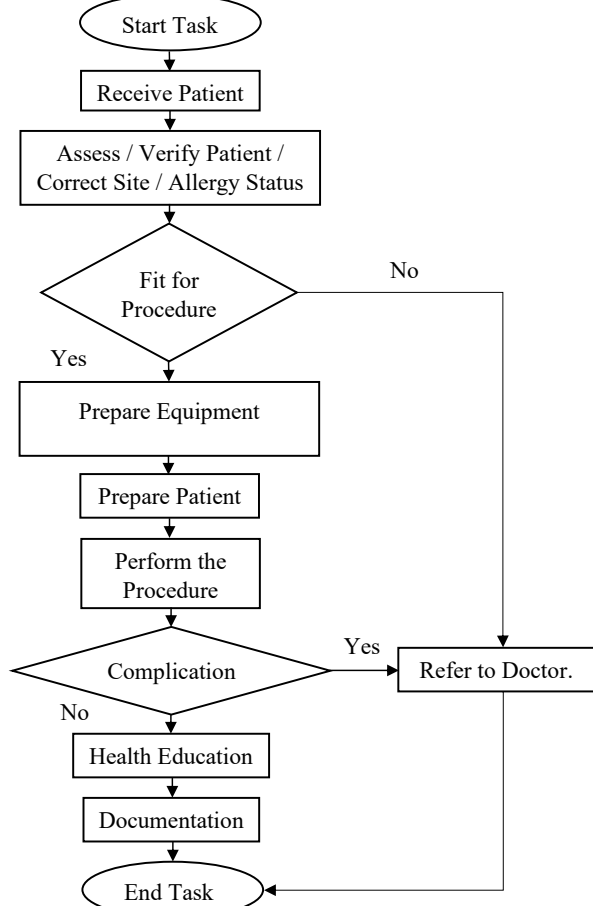
Stevens, S. (2013). *Management of an eye prosthesis or conformer*. Community eye health. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3678314/>

*Basic ocular care: Artificial Eye Care: Eye Prosthesis Care*. Midwest Eye Labs. (2018, February 26). <https://www.midwesteyelabs.com/basic-care/>

Cirino, E. (2018, May 25). *Prosthetic Eye: Cost, care, surgery, and more*. Healthline. <https://www.healthline.com/health/prosthetic-eye>

Zaky, O. B. (2023, November 21). *Ophthalmology – prosthetic eye*. Medical Solutions Barcelona. <https://www.medical-solutions-bcn.com/en/prosthetic-eye-ocular-prosthesis/#aftercare>

**PRE-OPERATIVE COUNSELLING**

|                           |   |
|---------------------------|---|
| <b>INTRODUCTION</b>       | Pre-operative counselling is a procedure designed to educate the patient about the upcoming operation, ensuring awareness of pre-operative preparation and post-operative care.   |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be performed by a privileged Assistant Medical Officer (AMO).</li> <li>• All patients planned for ophthalmic surgery.</li> </ul>  |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• Ensure the patient and family members have a clear understanding of the procedure's indication.</li> <li>• Ensure the patient and family members have a clear understanding of pre-operative care.</li> <li>• Ensure the patient and family members have a clear understanding of post-operative care.</li> </ul>  |
| <b>WORKFLOW</b>           |  <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive Patient]     Receive --&gt; Assess[Assess / Verify Patient /<br/>Correct Site / Allergy Status]     Assess --&gt; Fit{Fit for<br/>Procedure}     Fit -- No --&gt; Refer[Refer to Doctor.]     Fit -- Yes --&gt; Equip[Prepare Equipment]     Equip --&gt; Patient[Prepare Patient]     Patient --&gt; Perform[Perform the<br/>Procedure]     Perform --&gt; Comp{Complication}     Comp -- Yes --&gt; Refer     Comp -- No --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End   </pre> <p>The workflow diagram illustrates the steps of pre-operative counselling. It begins with 'Start Task', followed by 'Receive Patient' and 'Assess / Verify Patient / Correct Site / Allergy Status'. A decision diamond 'Fit for Procedure' follows. If 'No', the process goes to 'Refer to Doctor.'. If 'Yes', it proceeds to 'Prepare Equipment', 'Prepare Patient', and 'Perform the Procedure'. Another decision diamond 'Complication' follows. If 'Yes', it goes to 'Refer to Doctor.'. If 'No', it proceeds to 'Health Education', 'Documentation', and finally 'End Task'. The 'Refer to Doctor.' step also leads to 'End Task'.</p> |

| <b>WORK INSTRUCTION</b>                |   |   |   |
|--|---|---|---|
| <b>ACTIVITY</b>                        | <b>WORK PROCESS</b>   | <b>STANDARD</b>   | <b>REQUIREMENT</b>  |
| Receive Patient                        | <ul style="list-style-type: none"> <li>• Register patient particulars in the record book</li> </ul>   | Malaysian Patient Safety Goal 2.0 (MPSG)                            | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Record book / census</li> </ul>   |
| Assess / Verify Patient / Correct Site | <ul style="list-style-type: none"> <li>• Verify the correct patient.</li> <li>• Verify the correct procedure.</li> <li>• Verify the correct eye.</li> </ul>   | <i>Manual Arahan Kerja</i><br><br>Malaysian Patient Safety Goal 2.0 |   |
| Prepare Equipment                      | <ul style="list-style-type: none"> <li>• Prepare a conducive environment for counselling.</li> <li>• Prepare counselling materials.</li> <li>• Review clinical notes.</li> <li>• Compare with the OT booking list.</li> </ul> |   | <ul style="list-style-type: none"> <li>• A designated room.</li> <li>• Adequate lighting and ventilation."</li> <li>• Furnished with suitable furniture (e.g., a round table, comfortable chairs for patients and relatives).</li> <li>• Counselling materials (pamphlets, charts, audio-visuals, videos/CDs on surgery, etc., if applicable).</li> <li>• Appropriate materials for demonstration (e.g., lid care, eye drops/ointment, eye model, intraocular lens model, etc.).</li> </ul> |
| Prepare Patient                        | <ul style="list-style-type: none"> <li>• Inform the patient about the details of the procedure.</li> </ul>  | <i>Manual Arahan Kerja</i>  | <ul style="list-style-type: none"> <li>• Patient record</li> </ul>  |

|                              |  |                                   |  |
|------------------------------|--|-----------------------------------|--|
| <p>Perform the Procedure</p> | <ul style="list-style-type: none"> <li>• Provide general information on surgery.</li> <li>• Inform the patient about the scheduled operation date.</li> <li>• Determine anaesthesia type (local, regional, or general) for the upcoming procedure through discussion with the patient.</li> <li>• Ascertain the type of admission (inpatient / day-care)</li> <li>• Patient for under general anaesthesia / Monitored Anaesthetic Care (MAC)             <ol style="list-style-type: none"> <li>i. Confirm general anaesthetic clinic appointment. Admit early to designated ward.</li> <li>ii. Fast from midnight the night before.</li> <li>ii. Bring all medication during admission.</li> </ol> </li> <li>• Patient for local anaesthesia             <ol style="list-style-type: none"> <li>i. Admit on same day to day care centre/ward.</li> <li>ii. May take light breakfast.</li> </ol> </li> </ul> | <p><i>Manual Arahan Kerja</i></p> | <ul style="list-style-type: none"> <li>• Counselling materials (pamphlets, charts, audio visuals, video/CD on surgery etc.)</li> <li>• Appropriate materials for demonstration (e.g., lid care, eye drops/ointment, eye model, intraocular lens model etc.)</li> </ul> |
|------------------------------|--|-----------------------------------|--|

|  |  |  |  |
|--|--|--|--|
|  | <p>iii. Bring all medication.</p> <ul style="list-style-type: none"> <li>• Ascertain availability of intraocular lens/ implant as per hospital procedure. <ul style="list-style-type: none"> <li>i. Self-purchase</li> <li>ii. Pensioner</li> <li>iii. Peka B40</li> <li>iv. Welfare</li> </ul> </li> <li>• Provide Information of the Procedure</li> <li>• Pre-Operative <ul style="list-style-type: none"> <li>-Patient in supine position with face covered by a surgical drape.</li> </ul> </li> <li>• Intra-operative <ul style="list-style-type: none"> <li>- Avoid head and body movement.</li> <li>- Follow surgeon's instructions.</li> <li>- Inform surgeon if coughing/sneezing.</li> </ul> </li> <li>• Immediate Post op care <ul style="list-style-type: none"> <li>- After completion of surgery, the eye will be covered with eye pads / eye shield / bandage depends on type of surgery</li> <li>- Follow post operative instruction given regarding positioning.</li> <li>- Avoid rubbing the eye.</li> <li>- Avoid leaning or stooping forward.</li> </ul> </li> </ul> |  |  |
|--|--|--|--|

|                  |  |                            |  |
|------------------|--|----------------------------|--|
|                  | <ul style="list-style-type: none"> <li>- Use clean water to wash face (wudhu' are allowed) wipe with clean towel</li> <li>- Avoid shampoo entering eyes</li> <li>- Instil eye drops as instructed</li> <li>- Sleep with eye shield on</li> <li>- To follow post op position as advised by doctor (Normal prayer gesture are allowed)</li> <li>- Advice on sign / symptom of any complication. If any to seek immediate medical attention.</li> </ul> |                            |  |
| Health Education | <ul style="list-style-type: none"> <li>• Prepare the patient mentally and physically for the operation.</li> <li>• Continue taking all medications as prescribed.</li> <li>• Advise patient to go to eye clinic during office hour and emergency department immediately after office hour if any complication occurs.</li> <li>• Maintain good hygiene for eye care.</li> </ul>  |                            |  |
| Documentation    | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>   | <i>Manual Arahan Kerja</i> | <ul style="list-style-type: none"> <li>• Counselling book / Eye Card/ census.</li> </ul> |

**REFERENCE**

*Pre-operative and post-operative instructions.* The Eye Center. (2018, May 21).  
<https://theeyecenter.com/pre-operative-and-post-operative-instructions/>

*Feldman, M. (2012, January 1). Preoperative assessment and preparation. OUP Academic.* <https://academic.oup.com/book/25109/chapter-abstract/189318751?redirectedFrom=fulltext>

Preoperative medical evaluation for cataract surgery (2021, February).  
[https://www.aajournal.org/article/S0161-6420\(20\)31017-4/fulltext](https://www.aajournal.org/article/S0161-6420(20)31017-4/fulltext)

**TRANSCLERAL CYCLOPHOTOCOAGULATION (TSCPC)**

|                           |  |
|---------------------------|--|
| <b>INTRODUCTION</b>       | Transcleral cyclophotocoagulation (TSCPC) is a procedure that utilizes a specific diode laser probe for lowering intraocular pressure in various types of glaucoma. Patients with refractory glaucoma can benefit from TSCPC.  |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be assisted by a privileged Assistant Medical Officer (AMO).</li> <li>• All patient with refractory glaucoma / high IOP as indicated</li> </ul>  |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• TSCPC has primarily been used to lower intraocular pressure in cases of refractory glaucoma.</li> </ul>   |
| <b>WORKFLOW</b>           | <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive Patient]     Receive --&gt; Assess[Assess / Verify Patient / Correct Site / Allergy Status]     Assess --&gt; Fit{Fit for Procedure}     Fit -- No --&gt; Refer[Refer to Doctor]     Fit -- Yes --&gt; Equip[Prepare Equipment / Instruments/ Medication]     Equip --&gt; Prep[Prepare Patient]     Prep --&gt; Assist[Assist the Procedure]     Assist --&gt; Comp{Complication}     Comp -- Yes --&gt; Refer     Comp -- No --&gt; Clean[Cleaning and Sterilization of Microsurgical Instruments]     Clean --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End   </pre> |

| <b>WORK INSTRUCTION</b>                                 |  |   |  |
|---|--|---|--|
| <b>ACTIVITY</b>   | <b>WORK PROCESS</b>  | <b>STANDARD</b>   | <b>REQUIREMENT</b>   |
| Receive Patient   | <ul style="list-style-type: none"> <li>• Register patient particulars in record book</li> </ul>  | Malaysian Patient Safety Goal 2.0                                   | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Referral letter</li> <li>• Record book / census</li> </ul>   |
| Assess / Verify Patient / Correct Site / Allergy status | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Verify correct site.</li> <li>• Verify correct procedure.</li> <li>• Verify allergy status.</li> <li>• Ensure written consent has been taken.</li> </ul>   | <i>Manual Arahan Kerja</i><br><br>Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Signed consent form</li> </ul>   |
| Prepare Instruments / Equipment / Medication            | <ul style="list-style-type: none"> <li>• Make sure Diode Laser machine works perfectly.</li> <li>• Make sure TSCPC probe functioning and fibre optic cable is not kinked.</li> <li>• Prepare supplementary instruments.</li> <li>• Prepare disposable items.</li> <li>• Prepare solutions.</li> <li>• Verify correct medication.</li> <li>• Check medication expiry date.</li> </ul> |   | <ul style="list-style-type: none"> <li>• Diode Laser machine</li> <li>• TSCPC probe and fibre optic cable</li> <li>• Supplementary instruments               <ol style="list-style-type: none"> <li>Safety goggle</li> <li>Eye speculum</li> <li>Cataract towel</li> </ol> </li> <li>• Disposable items               <ol style="list-style-type: none"> <li>Dressing set</li> <li>Syringe with 26G needle.</li> <li>Sterile glove</li> </ol> </li> <li>• Solutions               <ol style="list-style-type: none"> <li>Antiseptic lotion</li> <li>Balanced Salt Solution (BSS)</li> </ol> </li> <li>• Medication               <ol style="list-style-type: none"> <li>Topical anaesthesia eye drop</li> <li>Lignocaine HCL 2%</li> <li>Bupivacaine HCL 0.5%</li> </ol> </li> </ul> |

|                      |   |                                   |  |
|----------------------|---|-----------------------------------|--|
|                      | <p><u>Medication Preparation Step</u></p> <p>1) Withdraw both Lignocaine HCL 2% and Bupivacaine HCL with ratio 1:1</p>  |                                   | iv. Topical antibiotics eye drop   |
| Prepare Patient      | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Inform the patient about the procedure.</li> <li>• Position patient in in a comfortable position and inform if any discomfort during and after procedure.</li> <li>• Clean and drape patient's eye with clean / aseptic technique</li> </ul>  | Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Antiseptic solution</li> <li>• Eye Drape / cataract towel</li> </ul>   |
| Assist the Procedure | <ul style="list-style-type: none"> <li>• Wash hand and gloving.</li> <li>• Assist doctor and wait for the next instructions.</li> </ul> <p><u>Steps (Perform by doctor)</u></p> <ol style="list-style-type: none"> <li>1) Doctor to confirm TSCPC parameters.</li> <li>2) Apply topical eye drop.</li> <li>3) Put eye speculum.</li> <li>4) Give local anaesthetic injection at peribulbar area (peribulbar block).</li> <li>5) Initiate the laser at the target area.</li> </ol> |                                   | <ul style="list-style-type: none"> <li>• Sterile glove</li> </ul> <p><u>Steps (Hand over by AMO) to doctor</u></p> <ol style="list-style-type: none"> <li>1) Check machine setting.</li> <li>2) Topical anaesthesia eye drop</li> <li>3) Eye speculum</li> <li>4) Local anaesthesia mixture in a syringe with 26G needle.</li> <li>5) TSCPC Probe</li> </ol> |

|  |   |   |  |
|--|---|---|--|
|  | 6) Note the starting and finishing time.<br>7) Observe patient's level of pain.   |   | 6) Irrigation of cornea using BSS<br>7) Observe                              |
| Cleaning And Sterilization of Microsurgery Instruments | Refer to Cleaning and sterilization of microsurgery instruments guideline.  | Policies and Procedure on Infection Prevention and control, MOH, 2018 (3 <sup>rd</sup> edition) | Refer to Cleaning and sterilization of microsurgery instruments guideline.   |
| Health Education                                       | <ul style="list-style-type: none"> <li>• Observe any bleeding / inflammation.</li> <li>• Observe pain.</li> <li>• Come to the emergency department immediately if any complication occurs.</li> <li>• Follow up compliance</li> </ul> |   |  |
| Documentation  | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>  | <i>Manual arahan kerja</i>  | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> </ul> |

## REFERENCE

Eric, Sayed, M., Moster, S. J., Holley, T. D., Peiyao, J., Vanner, E. A., & Lee, R. T.

(2018). *Transscleral Diode Laser Cyclophotocoagulation*. 1(2), 115–122.

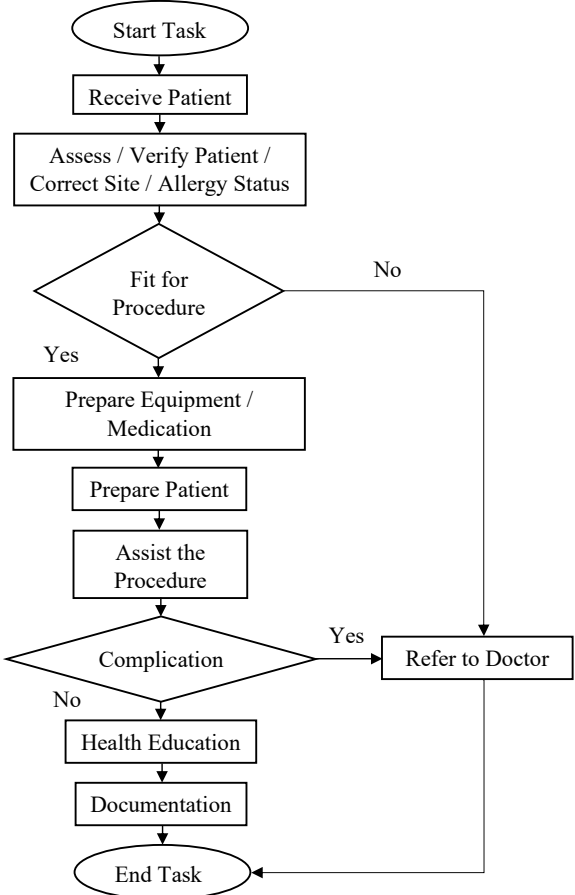
<https://doi.org/10.1016/j.ogla.2018.08.007>

Samples, J. R., & Ahmed, I. I. K. (2020). *Current Developments in Glaucoma Surgery and MIGS*. Kugler Publications.

Samples, J. R., & Ahmed, I. K. (2014). *Surgical Innovations in Glaucoma*. Springer Science & Business Media.

Samples, J. R., & Knepper, P. A. (2018). *Glaucoma Research and Clinical Advances*. Kugler Publications.

**LASER TREATMENT**

|                           |   |
|---------------------------|---|
| <b>INTRODUCTION</b>       | Ophthalmic lasers allow precise treatment of a range of eye problems with little risk of infection. Many laser procedures are relatively pain free and can be performed on an outpatient basis. The combination of safety, accuracy, and relative low cost make lasers very useful ophthalmic tools   |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be performed by a privileged Assistant Medical Officer (AMO).</li> <li>• All patients indicated for the procedure</li> </ul>  |
| <b>SPECIFIC OBJECTIVE</b> | For diagnostics and therapy in the most important eye diseases like diabetic retinopathy, age-related macular degeneration and glaucoma   |
| <b>WORKFLOW</b>           |  <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive Patient]     Receive --&gt; Assess[Assess / Verify Patient /<br/>Correct Site / Allergy Status]     Assess --&gt; Fit{Fit for<br/>Procedure}     Fit -- No --&gt; Refer[Refer to Doctor]     Fit -- Yes --&gt; Equip[Prepare Equipment /<br/>Medication]     Equip --&gt; Patient[Prepare Patient]     Patient --&gt; Assist[Assist the<br/>Procedure]     Assist --&gt; Comp{Complication}     Comp -- Yes --&gt; Refer     Comp -- No --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End   </pre> <p>The workflow diagram for laser treatment starts with 'Start Task', followed by 'Receive Patient', 'Assess / Verify Patient / Correct Site / Allergy Status', and a decision point 'Fit for Procedure'. If 'No', it leads to 'Refer to Doctor'. If 'Yes', it proceeds to 'Prepare Equipment / Medication', 'Prepare Patient', and 'Assist the Procedure'. Another decision point 'Complication' follows; if 'Yes', it leads to 'Refer to Doctor', and if 'No', it leads to 'Health Education', 'Documentation', and finally 'End Task'. The 'Refer to Doctor' step also leads to 'End Task'.</p> |

| WORK INSTRUCTION                       |  |   |   |
|--|--|---|---|
| ACTIVITY                               | WORK PROCESS   | STANDARD  | REQUIREMENT   |
| Receive Patient                        | <ul style="list-style-type: none"> <li>Register patient particulars in record book</li> </ul>  | Malaysian Patient Safety Goal 2.0   | <ul style="list-style-type: none"> <li>Patient appointment card / record</li> <li>Record book / census</li> </ul>   |
| Assess / Verify Patient / Correct Site | <ul style="list-style-type: none"> <li>Verify correct patient.</li> <li>Verify correct site.</li> <li>Verify correct procedure.</li> <li>Ensure written consent has been taken.</li> </ul>   | <i>Manual Arahan Kerja</i><br><br>Malaysian Patient Safety Goal 2.0   | <ul style="list-style-type: none"> <li>Patient appointment card / record</li> <li>Signed consent form</li> </ul>  |
| Prepare Instruments / Equipment /      | <ul style="list-style-type: none"> <li>Check function of laser machine</li> <li>Ensure lenses used in the dedicated delivery system is cleaned and ready for use</li> <li>Refer to specific laser machine user manual for details</li> </ul> | <ul style="list-style-type: none"> <li>Laser safety protocol</li> <li>Policies &amp; Procedures on Infection prevention and Control, MOH, 2018 (3rd edition)</li> </ul> | <ul style="list-style-type: none"> <li>Laser Console</li> <li>Appropriate lenses as per doctor's preference</li> <li>Appropriate goggles</li> <li>Laser Delivery Systems</li> <li>Binocular indirect ophthalmoscope</li> <li>Slit Lamp</li> <li>Laser probes</li> </ul> |
| Prepare Patient                        | <ul style="list-style-type: none"> <li>Verify correct patient.</li> <li>Inform the patient about the procedure.</li> <li>Sit patient at the laser machine and ensure their position is comfortable</li> </ul>                                | Malaysian Patient Safety Goal 2.0<br><br><i>Manual Arahan Kerja</i>   | <ul style="list-style-type: none"> <li>Patient record</li> </ul>  |
| Assist the Procedure                   | <ul style="list-style-type: none"> <li>Ensure all present wear protective laser goggles</li> </ul>   | <i>Guidance document on the safe use of medical and dental lasers, Pekeliling KPK, rujukan (19)</i>   | <ul style="list-style-type: none"> <li>Appropriate goggles</li> </ul>   |

|                      |   |   |  |
|----------------------|---|---|--|
|                      | <ul style="list-style-type: none"> <li>• Ensure laser hazard light is switched on</li> <li>• Assist doctor and wait for the next instructions</li> <li>• Observe patient throughout procedure ensuring patient's comfort and correct position maintained</li> <li>• At the completion of treatment, the laser should be in "stand-by" mode and the power reduced to zero</li> </ul> | <i>dlm.KKM-153<br/>PCG/FP/GL(3)<br/>jld.2, (15 Jan 2016)</i>                                    |  |
| Cleaning Instruments | <ul style="list-style-type: none"> <li>• Clean the lens after laser procedure done</li> </ul>   | Policies and Procedure on Infection Prevention and control, MOH, 2018 (3 <sup>rd</sup> edition) | Refer to Cleaning and sterilization of microsurgery instruments guideline.   |
| Health Education     | <ul style="list-style-type: none"> <li>• Advise patient to take analgesic if needed.</li> <li>• Observe side effects / complications</li> <li>• Advise patient to go to eye clinic during office hours or emergency department immediately after office hours if any complication occurs.</li> <li>• Emphasize on follow up compliance</li> </ul>                                   |   |  |
| Documentation        | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>  | Manual prosedur Kerja/arahan kerja  | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> </ul> |

**REFERENCES**

- Ismael Cordero. (2015). *Understanding and safely using ophthalmic lasers* (Vol. 28)  
<https://www.cehjournal.org/wp-content/uploads/understanding-and-safely-using-ophthalmic-lasers.pdf>
- Laser Safety Protocol*. (2018). Retrieved October 31, 2021, from <https://ranzco.edu/wp-content/uploads/2018/11/RANZCO-laser-safety-protocol.pdf>
- Mardin, C. (2010). Lasers in Ophthalmology [Review of *Lasers in Ophthalmology*]. *Physics Procedia*, 631–636.  
[https://www.researchgate.net/publication/271882264\\_Lasers\\_in\\_Ophthalmology](https://www.researchgate.net/publication/271882264_Lasers_in_Ophthalmology)

**EPILATION OF EYE LASHES**

|                           |   |
|---------------------------|---|
| <b>INTRODUCTION</b>       | Eyelash epilation is temporary, as lashes usually regrow. Oculoplastic surgeons may suggest removing only affected follicles through techniques like electrolysis or radiofrequency ablation for long-term relief. However, these methods require expert precision to avoid complications, and consultation with a specialist is essential.   |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be assisted by a privileged Assistant Medical Officer (AMO).</li> <li>• All patient indicated for the procedure.</li> </ul>   |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• To remove ingrowing eyelashes (trichiasis).</li> <li>• To prevent corneal abrasion.</li> </ul>   |
| <b>WORKFLOW</b>           | <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive Patient]     Receive --&gt; Assess[Assess / Verify Patient /<br/>Correct Site / Allergy Status]     Assess --&gt; Fit{Fit for<br/>Procedure}     Fit -- No --&gt; Refer[Refer to Doctor]     Fit -- Yes --&gt; Equip[Prepare Equipment /<br/>Instruments/ Medication]     Equip --&gt; Prep[Prepare Patient]     Prep --&gt; Assist[Assist the<br/>Procedure]     Assist --&gt; Comp{Complication}     Comp -- Yes --&gt; Refer     Comp -- No --&gt; Clean[Cleaning and Sterilization of<br/>Microsurgical Instruments]     Clean --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; Fit     Refer --&gt; End   </pre> |

| <b>WORK INSTRUCTION</b>                                 |   |   |   |
|---|---|---|---|
| <b>ACTIVITY</b>   | <b>WORK PROCESS</b>   | <b>STANDARD</b>   | <b>REQUIREMENT</b>  |
| Receive Patient   | <ul style="list-style-type: none"> <li>Record patient's information in the record book.</li> </ul>  | Malaysian Patient Safety Goal 2.0                                   | <ul style="list-style-type: none"> <li>Patient appointment card / record</li> <li>Record book / census</li> </ul>   |
| Assess / Verify Patient / Correct Site / Allergy status | <ul style="list-style-type: none"> <li>Verify correct patient</li> <li>Verify correct site</li> <li>Verify correct procedure</li> <li>Verify allergy status</li> <li>Ensure written consent has been taken</li> </ul>   | <i>Manual Arahan Kerja</i><br><br>Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>Patient appointment card / record</li> <li>Signed consent form</li> </ul>  |
| Prepare Instruments / Equipment / Medication            | <ul style="list-style-type: none"> <li>Prepare sterile instruments</li> <li>Verify correct medication</li> <li>Check medication expiry date</li> </ul>  |   | <ul style="list-style-type: none"> <li>Epilation forceps</li> <li>Medication               <ol style="list-style-type: none"> <li>Topical anesthesia</li> </ol> </li> </ul>   |
| Prepare Patient   | <ul style="list-style-type: none"> <li>Verify correct patient</li> <li>Inform the patient about the procedure</li> <li>Place patient in a comfortable position and inform if any discomfort during and after procedure</li> </ul>   | Malaysian Patient Safety Goal 2.0<br><br><i>Manual Arahan Kerja</i> | <ul style="list-style-type: none"> <li>Patient record</li> </ul>  |
| Assist the Procedure                                    | <ol style="list-style-type: none"> <li>Wash hand and gloving</li> <li>Assist doctor and wait for the next instructions</li> </ol> <p><u>Steps (Perform by doctor)</u></p> <ol style="list-style-type: none"> <li>Instill topical anaesthetic eye drops into the lower fornix.</li> <li>Cleanse the eye with cotton swabs soaked in normal saline solution.</li> <li>Wash and dry your hands.</li> <li>Don gloves.</li> <li>Ask the patient to look up or down, depending</li> </ol> |   | <ul style="list-style-type: none"> <li>Disposable glove</li> </ul> <p><u>Steps (Hand over by AMO) to doctor</u></p> <ol style="list-style-type: none"> <li>Drop topical anesthesia</li> <li>Normal saline 0.9% Solution</li> <li>Observe</li> <li>Observe</li> <li>Observe</li> </ol> |

|  |  |   |  |
|--|--|---|--|
|  | <p>on the location of the misdirected eyelashes (upper or lower eyelid, respectively).</p> <ol style="list-style-type: none"> <li>6) Evert the affected eyelid gently to clear the lashes from the cornea.</li> <li>7) Grip the misdirected lash firmly with epilation forceps near the hair follicle.</li> <li>8) Pull the lash firmly and swiftly along the axis to remove it from the follicle.</li> <li>9) Ensure that the lash is not broken halfway and completely removed from the root.</li> <li>10) Repeat the same process to remove remaining misdirected lashes.</li> <li>11) Clean the eye and apply eye drops/ointment if needed.</li> </ol> |   | <ol style="list-style-type: none"> <li>6) Observe</li> <li>7) Epilation forceps</li> <li>8) Cotton swab</li> <li>9) Cotton bud (if necessary)</li> <li>10) Observe</li> <li>11) Drop antibiotic</li> </ol> |
| Cleaning and Sterilization of Microsurgery Instruments | Refer to Cleaning and sterilization of microsurgery instruments guideline  | Policies and Procedure on Infection Prevention and control, MOH, 2018 (3 <sup>rd</sup> edition) | Refer to Cleaning and sterilization of microsurgery instruments guideline.   |
| Health Education                                       | <ul style="list-style-type: none"> <li>• Instruct the patient on eye care and medication use.</li> <li>• Advise the patient to observe for potential complications, such as abnormal lash growth.</li> <li>• Advise patient to go to eye clinic during office</li> </ul>   |   |  |

|               |   |                            |  |
|---------------|---|----------------------------|--|
|               | <p>hour and emergency department immediately after office hour if any complication occurs</p> <ul style="list-style-type: none"> <li>• Emphasize the importance of following up for proper care.</li> </ul> |                            |  |
| Documentation | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>  | <i>Manual Arahan Kerja</i> | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> </ul> |

## REFERENCES

- Advisor, S. S. N. (2009). *Community Eye Health Journal " Lacrimal syringing*. Community Eye Health Journal. <https://www.cehjournal.org/article/lacrimal-syringing/>
- Nenkova, B., & Manolova, Y. (2017). Posterior lamellar tarsal rotation technique in entropion with upper eyelid trichiasis. *Bulgarian Review of Ophthalmology*, 61(4), 20. <https://doi.org/10.14748/bro.v0i4.4783>
- Rajak, S. N., Habtamu, E., Weiss, H. A., Bedri, A., Gebre, T., Genet, A., Khaw, P. T., Bailey, R. L., Mabey, D. C. W., Gilbert, C. E., Emerson, P. M., & Burton, M. J. (2012, January). *Epilation for Trachomatous Trichiasis and the risk of corneal opacification*. *Ophthalmology*. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3694301/>

| <b>SYRINGING OF LACRIMAL PASSAGES</b> |   |
|---------------------------------------|---|
| <b>INTRODUCTION</b>                   | Lacrimal syringing is done to test the patency of the lacrimal drainage system.   |
| <b>SCOPE</b>                          | <ul style="list-style-type: none"> <li>The procedure will be assisted by a privileged Assistant Medical Officer (AMO).</li> <li>All adult patient with suspected nasolacrimal duct obstruction.</li> </ul>  |
| <b>SPECIFIC OBJECTIVE</b>             | <ul style="list-style-type: none"> <li>To assess the patency of the lacrimal system.</li> <li>To flush debris from the system – which can improve epiphora symptoms.</li> <li>To elucidate the level of blockage where the system is found to be non-patent.</li> </ul>   |
| <b>WORKFLOW</b>                       | <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive Patient]     Receive --&gt; Assess[Assess / Verify Patient /<br/>Correct Site / Allergy Status]     Assess --&gt; Fit{Fit for<br/>Procedure}     Fit -- No --&gt; Refer[Refer to Doctor]     Fit -- Yes --&gt; PrepareInst[Prepare Instruments /<br/>Equipment / Medication]     PrepareInst --&gt; PreparePat[Prepare Patient]     PreparePat --&gt; Assist[Assist the<br/>Procedure]     Assist --&gt; Comp{Complication}     Comp -- Yes --&gt; Refer     Comp -- No --&gt; Clean[Cleaning and Sterilization of<br/>Microsurgical Instruments]     Clean --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End   </pre> |

| WORK INSTRUCTION  |  |   |  |
|---|--|---|--|
| ACTIVITY  | WORK PROCESS   | STANDARD  | REQUIREMENT  |
| Receive Patient   | <ul style="list-style-type: none"> <li>• Register patient particulars in record book.</li> </ul>   | Malaysian Patient Safety Goal 2.0   | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Referral letter</li> <li>• Record book / census</li> </ul>   |
| Assess / Verify Patient / Correct Site / Allergy Status | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Verify correct site.</li> <li>• Verify correct procedure.</li> <li>• Verify allergy status</li> <li>• Ensure verbal consent has been taken.</li> </ul> | Malaysian Patient Safety Goal 2.0   | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> </ul>  |
| Prepare Instruments / Equipment/Medication              | <ul style="list-style-type: none"> <li>• Prepare complete syringing set</li> <li>• Verify correct medication.</li> <li>• Check medication expiry date</li> </ul>   | Policies & Procedures on Infection & Prevention and Control. MOH.2018 (3rd Edition) | <ul style="list-style-type: none"> <li>• Syringing Set               <ol style="list-style-type: none"> <li>Nettleship punctum dilator</li> <li>Lacrimal cannula</li> </ol> </li> <li>• Disposable items               <ol style="list-style-type: none"> <li>Syringe 3cc</li> <li>Cotton swab</li> </ol> </li> <li>• Solution               <ol style="list-style-type: none"> <li>Normal saline 0.9%</li> </ol> </li> <li>• Medication               <ol style="list-style-type: none"> <li>Topical Anaesthesia</li> </ol> </li> </ul> |
| Prepare Patient   | <ul style="list-style-type: none"> <li>• Inform the patient about the procedure.</li> <li>• Position patient in supine on the couch or sitting on the chair.</li> <li>• Clean patient's eye with sterile solution.</li> </ul>      | Malaysian Patient Safety Goal 2.0<br><br><i>Manual Arahan Kerja</i>                 | <ul style="list-style-type: none"> <li>• Patient record</li> </ul>   |
| Assist the Procedure                                    | <ul style="list-style-type: none"> <li>• Wash hand and gloving.</li> <li>• Assist doctor and wait for the next instructions</li> </ul>   |   | <ul style="list-style-type: none"> <li>• Sterile glove</li> </ul>  |

|  | <u>Steps (Perform by doctor)</u>  |  | <u>Steps (Hand over by AMO) to doctor</u>  |
|--|---|--|--|
|  | <ol style="list-style-type: none"> <li>1) Prepare 3ml syringe with normal saline mounted with lacrimal cannula</li> <li>2) Instil topical anaesthetic eye drops into the lower fornix</li> <li>3) Ask patient to look upwards and outwards (away from the nose), maintain this gaze until the procedure is over</li> <li>4) Gently pull down the lower eyelid to expose the lower punctum</li> <li>5) Insert Nettleship dilator into the lower punctum (vertically downward- 2mm) and gently rotate the dilator</li> <li>6) Apply slight lateral traction on the lower lid and gently insert the dilator in more horizontal direction towards nasally</li> <li>7) Remove the dilator and hold the syringe mounted with lacrimal cannula</li> <li>8) Gently insert the tip of cannula in the lower punctum</li> <li>9) Again, apply slight lateral traction to the lower lid and insert the cannula along the canaliculus</li> <li>10) Continuously insert until a “stop” is reached and determine whether the stop is soft or hard</li> </ol> |  | <ol style="list-style-type: none"> <li>1) 3ml syringe, normal saline, lacrimal cannula</li> <li>2) Local anaesthetic eye drop</li> <li>3) Observe</li> <li>4) Observe</li> <li>5) Nettleship punctum dilator</li> <li>6) Observe</li> <li>7) Observe</li> <li>8) Observe</li> <li>9) Observe</li> <li>10) Observe</li> </ol> |

|  |  |   |   |
|--|--|---|---|
|  | <p>11)<b>Hard stop-</b> the cannula is within the lacrimal sac and touching against the lacrimal bone (patent canalicular system)<br/> <b>Soft stop-</b>the cannula is within the canaliculus and pushing against the spongy outer walls of the lacrimal sac suggesting the blockage within the canalicular system</p> <p>12)Withdraw the cannula from the stop about 2 mm and slowly inject the fluid</p> <p>13)Simultaneously, look at the upper punctum and observe for any regurgitation</p> <p>14)Regurgitation at upper and lower punctum indicate blockage at common canaliculus</p> <p>15)Ask patient to notify if feel the sensation of salty taste at throat</p> <p>16)The lacrimal passage is patent if fluid is felt at the back of the throat</p> <p>17)Repeat steps in upper punctum</p> |   | <p>11)Observe</p> <p>12)Observe</p> <p>13)Observe</p> <p>14)Observe</p> <p>15)Observe</p> <p>16)Observe</p> <p>17)Observe</p> |
| Cleaning And Sterilization of Microsurgery Instruments | Refer to Cleaning and sterilization of microsurgery instruments guideline.   | Policies and Procedure on Infection Prevention and control, MOH, 2018 (3 <sup>rd</sup> edition) | Refer to Cleaning and sterilization of microsurgery instruments guideline.  |

|                  |  |                            |  |
|------------------|--|----------------------------|--|
| Health Education | <ul style="list-style-type: none"> <li>• Educate patient on how to perform tear duct massage, eye dressing and apply eye drops.</li> <li>• Advice patient to go to eye clinic during office hour and emergency department immediately after office hour if any complication occurs.</li> <li>• Emphasize on follow up compliance.</li> </ul> |                            |  |
| Documentation    | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>   | <i>Manual Arahan Kerja</i> | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> </ul> |

## REFERENCES

Wooley, C. C. H. (2018, June 20). *Lacrimal drainage system irrigation*. American Academy of Ophthalmology. <https://www.aao.org/education/image/new-mediabeacon-item-66>

Nepal, E. H. (2018, April 23). *Lacrimal Syringing, Procedure, Result, Indication and Contraindications (ROPLAS)*. Eye Health Nepal. <https://www.eyehealthnepal.com/lacrimal-syringing-procedure-result-indication-and-contraindications-roplas/>

Eye Health Nepal. (2021, June 19). *Lacrimal syringing, procedure, result, indication and contraindications (ROPLAS)*. <https://www.eyehealthnepal.com/lacrimal-syringing-procedure-result-indication-and-contraindications-roplas/>

Dagar, S. (2019, January 24). *Assisting for SAC syringing*. Slideshare. <https://www.slideshare.net/soniadagar2/assisting-for-sac-syringing-129049931>

**EYE RODDING AND REMOVAL OF PSEUDO-MEMBRANE**

|                           |  |
|---------------------------|--|
| <b>INTRODUCTION</b>       | A pseudo-membrane, also known as a false membrane, is a thin yellowish-white membrane observed in the fornices and palpebral conjunctiva. This membrane can be easily peeled off, revealing an intact underlying epithelium. Pseudo-membranes sometimes develop during infections and inflammations. They typically cover the conjunctiva and can cause significant discomfort.  |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be assisted by privileged Assistant Medical Officer (AMO)</li> <li>• All patient with severe pseudomembranous conjunctivitis</li> </ul>  |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• To prevent formation of symblepharon.</li> <li>• To enhance absorption of topical medication.</li> <li>• To reduce the symptom of inflammations and speed up healing process.</li> </ul>  |
| <b>WORKFLOW</b>           | <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive Patient]     Receive --&gt; Assess[Assess / Verify Patient / Correct Site / Allergy Status]     Assess --&gt; Fit{Fit for Procedure}     Fit -- No --&gt; Refer[Refer to Doctor]     Fit -- Yes --&gt; Equip[Prepare Equipment / Instruments/ Medication]     Equip --&gt; Prep[Prepare Patient]     Prep --&gt; Assist[Assist the Procedure]     Assist --&gt; Comp{Complication}     Comp -- Yes --&gt; Refer     Comp -- No --&gt; Clean[Cleaning and Sterilization of Microsurgical Instruments]     Clean --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End   </pre> |

| <b>WORK INSTRUCTION</b>                                 |   |                                   |   |
|---|---|-----------------------------------|---|
| <b>ACTIVITY</b>   | <b>WORK PROCESS</b>   | <b>STANDARD</b>                   | <b>REQUIREMENT</b>  |
| Receive Patient   | <ul style="list-style-type: none"> <li>• Register patient particular in record book.</li> </ul>   | Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Patient's appointment card / record</li> <li>• Referral letter</li> <li>• Record book / census</li> </ul>  |
| Assess / Verify Patient / Correct Site / Allergy Status | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Verify correct site.</li> <li>• Verify correct procedure.</li> <li>• Verify allergy status.</li> <li>• Ensure verbal consent has been taken.</li> </ul>   | Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Patient's appointment card / record</li> </ul>   |
| Prepare Instruments / Equipment / Medication            | <ul style="list-style-type: none"> <li>• Prepare complete &amp; sterile eye dressing set.</li> <li>• Prepare supplementary instruments.</li> <li>• Prepare solutions.</li> <li>• Prepare disposable item.</li> <li>• Verify correct medication.</li> <li>• Check medication expiry date.</li> </ul> |                                   | <ul style="list-style-type: none"> <li>• Sterile eye dressing set</li> <li>• Supplementary instruments               <ol style="list-style-type: none"> <li>i. Glass rod</li> <li>ii. Retractor</li> <li>iii. Angle poised lamp / equivalent.</li> </ol> </li> <li>• Solutions               <ol style="list-style-type: none"> <li>i. Normal Saline 0.9%</li> </ol> </li> <li>• Disposable item               <ol style="list-style-type: none"> <li>i. Cotton buds</li> <li>ii. Eye pad</li> <li>iii. Gauze</li> <li>iv. Glove</li> </ol> </li> <li>• Medication               <ol style="list-style-type: none"> <li>i. Local Anaesthetic eye drops</li> <li>ii. Topical Antibiotic</li> </ol> </li> </ul> |
| Prepare Patient   | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Inform the patient about the procedure.</li> <li>• Position patient in comfortable position.</li> </ul>   | Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Patient record</li> <li>• Comfortable chair / couch</li> </ul>   |

|                      |   |   |  |
|----------------------|---|---|--|
|                      | <ul style="list-style-type: none"> <li>• Chaperon assistance if necessary.</li> </ul>   |   |  |
| Assist the Procedure | <ul style="list-style-type: none"> <li>• Wash and dry hands</li> <li>• Assist doctor and wait for the next instructions.</li> </ul> <p><u>Steps (Perform by doctor)</u></p> <ol style="list-style-type: none"> <li>1) Apply local anaesthetic eye drops.</li> <li>2) Open the patient's eye gently and if necessary, use retractors.</li> <li>3) Wipe off the pseudo-membrane with a cotton bud gently.</li> <li>4) Wipe off any bleeding with sterile wet gauze if present. If necessary, apply gentle pressure.</li> <li>5) Repeat procedure till all pseudo-membrane are removed.</li> <li>6) Gently break any adhesions present by sweeping the glass rod from side to side (rodding)</li> <li>7) Repeat rodding and apply local anaesthetic eye drops if necessary.</li> </ol> | Manual Work Instructions (If available) | <ul style="list-style-type: none"> <li>• Hand soap</li> <li>• Glove</li> </ul> <p><u>Steps (Hand over by AMO)</u></p> <ol style="list-style-type: none"> <li>1) Local anaesthetic eye drops</li> <li>2) Retractor</li> <li>3) Cotton bud</li> <li>4) Sterile wet gauze</li> <li>5) Cotton bud</li> <li>6) Glass rod</li> <li>7) Local anaesthetic eye drops</li> </ol> |

|                  |   |                            |  |
|------------------|---|----------------------------|--|
|                  | 8) Clean the eye and instil antibiotic eye ointment.<br>9) Cover patient's eye if necessary<br>10) Observe patient for pain and bleeding for at least 5 minutes   |                            | 8) Topical Antibiotic<br><br>9) Eye pad<br><br>10) Observe                   |
| Health Education | <ul style="list-style-type: none"> <li>• Advice patients to go to eye clinic during office hours and emergency department immediately after office hour if any complication occurs.</li> <li>• Compliance to medication</li> <li>• Emphasize follow up compliance.</li> </ul> |                            |  |
| Documentation    | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>  | <i>Manual arahan kerja</i> | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> </ul> |

## REFERENCE

Ho, D., Lim, S., & Kim Teck, Y. (2020, May 18). Pseudomembranous Conjunctivitis: A Possible Conjunctival Foreign Body Aetiology. *Cereus*, 12(5).

<https://doi.org/10.7759/cureus.8176>

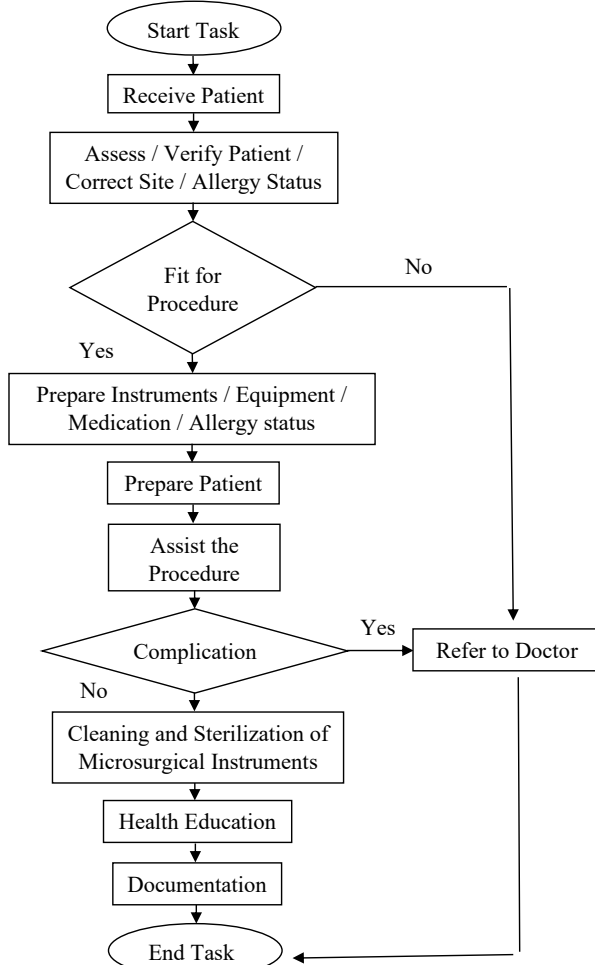
Kertes, P. J., & Johnson, T. M. (2014). *Evidence-based eye care*. Wolters Kluwer Health.

Louis Ainsley Wilson. (1979). *External Diseases of the Eye*. HarperCollins Publishers.

## TOILET AND SUTURING OF EYELID LACERATION

|                           |   |
|---------------------------|---|
| <b>INTRODUCTION</b>       | Toilet and suturing (T&S) are a treatment for eyelid laceration.  |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>The procedure will be assisted by a privileged Assistant Medical Officer (AMO).</li> <li>All patient with eyelid laceration requiring Toilet and Suturing (T&amp;S)</li> </ul> |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>To secure the bleeding and</li> <li>To oppose the lid laceration</li> </ul>  |

### WORKFLOW



| WORK INSTRUCTION  |  |   |   |
|---|--|---|---|
| ACTIVITY  | WORK PROCESS   | STANDARD  | REQUIREMENT   |
| Receive Patient   | Register patient particulars in record book  | Malaysian Patient Safety Goal 2.0                               | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Record book / census</li> </ul>   |
| Assess / Verify Patient / Correct Site / Allergy status | <ul style="list-style-type: none"> <li>• Verify correct patient</li> <li>• Verify correct site</li> <li>• Verify correct procedure</li> <li>• Verify allergy status</li> <li>• Ensure written consent has been taken</li> </ul>  | <i>Manual Arahan Kerja</i><br>Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Signed consent form</li> </ul>  |
| Prepare Instruments / Equipment / Medication            | <ul style="list-style-type: none"> <li>• Prepare complete Toilet and Suture set</li> <li>• Prepare supplementary instruments</li> <li>• Prepare disposable items.</li> <li>• Prepare solutions</li> <li>• Verify correct medication.</li> <li>• Check medication expiry date.</li> </ul> |   | <ul style="list-style-type: none"> <li>• Toilet and suture set<br/><b>*Refer Appendix 1</b></li> <li>• Disposable items               <ol style="list-style-type: none"> <li>Disposable dressing set</li> <li>3ml sterile syringe</li> <li>Sterile needle 23G,26G</li> <li>6-0 absorbable/non absorbable sutures (Cutting edge needle)</li> <li>Adhesive plaster</li> <li>Sterile eye pads</li> </ol> </li> <li>• Solutions               <ol style="list-style-type: none"> <li>Antiseptic solution</li> <li>Normal saline</li> </ol> </li> <li>• Medications               <ol style="list-style-type: none"> <li>Injection lignocaine 2%</li> <li>Antibiotic ointment</li> </ol> </li> </ul> |
| Prepare patient   | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Verify correct site.</li> <li>• Verify consent.</li> <li>• Explain the purpose of and the procedure to patient and / or relatives.</li> </ul>  | Malaysian Patient Safety Goal 2.0                               | <ul style="list-style-type: none"> <li>• Procedure Record Book.</li> </ul>  |

|                     |  |                            |   |
|---------------------|--|----------------------------|---|
|                     | <ul style="list-style-type: none"> <li>Position the patient comfortably in supine position.</li> </ul>   |                            |   |
| Assisting procedure | <ul style="list-style-type: none"> <li>Ask patient permission to start.</li> </ul> <p><u>Steps of procedure</u></p> <ol style="list-style-type: none"> <li>Aseptic technique is used.</li> <li>Put on gloves</li> <li>Clean the patient's eye</li> <li>Drape the Patient</li> <li>Inspect the extent of the laceration</li> <li>Remove any foreign body if present</li> <li>Undermine skin if tissue loss is significant</li> <li>Expose the skin laceration edges and suture with 6/0 nylon suture</li> <li>Clean the eye and apply eye ointment</li> <li>Clean the instruments used for procedure.</li> <li>Wash hands after procedure</li> <li>Observe patient for pain / discomfort</li> </ol> | <i>Arahan Kerja manual</i> | <ol style="list-style-type: none"> <li>Antiseptic solution</li> <li>Cataract towel</li> <li>Conjunctival tooth forcep and cotton bud</li> <li>Injection lignocaine 2%, 6/0 absorbable and non-absorbable suture</li> <li>Antibiotic ointment and sterile eye pad</li> </ol> |
| Health Education    | <ul style="list-style-type: none"> <li>Advised patient to go to eye clinic during office hours or emergency department immediately after office hour if any complication occurs.</li> <li>Compliance to medication and follow up appointment.</li> </ul>   |                            |   |
| Documentation       | <ul style="list-style-type: none"> <li>Record procedure</li> </ul>   | <i>Arahan Kerja manual</i> | <ul style="list-style-type: none"> <li>Procedure book / census.</li> </ul>  |

**REFERENCE**

Antwi-Boasiako, S. (2020). *Ophthalmic nurses: vital team members in the push for better eye health*. PubMed Central (PMC).

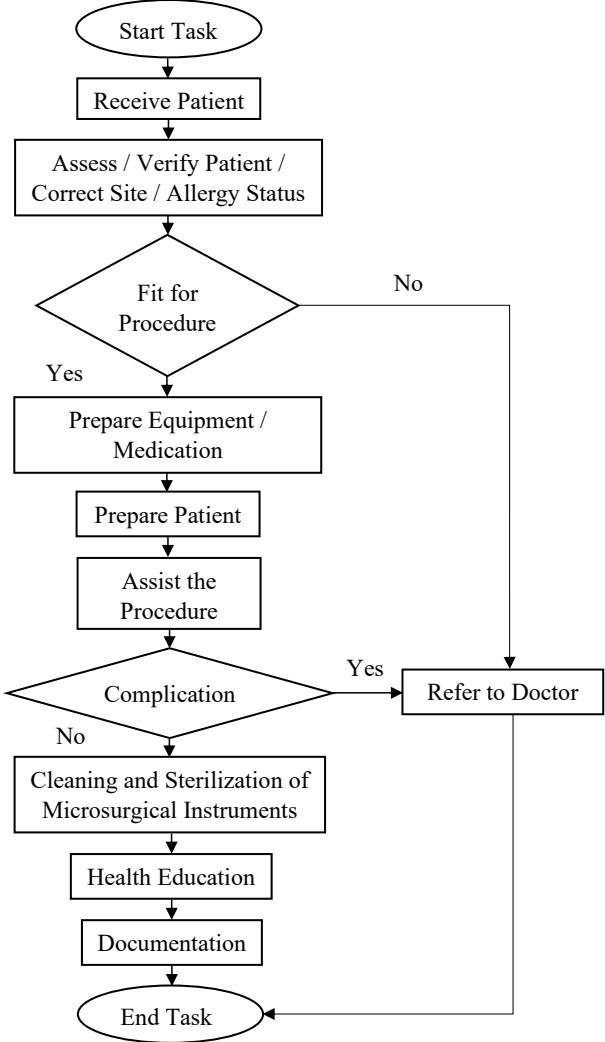
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8115702/>

*Eyelid laceration*. (2024, January 1). PubMed. <https://pubmed.ncbi.nlm.nih.gov/29261910/>

*Eyelid laceration - EyeWiki*. (2023, September 26).

[https://eyewiki.aao.org/Eyelid\\_Laceration](https://eyewiki.aao.org/Eyelid_Laceration)

**CORNEA FOREIGN BODY REMOVAL**

|                           |  |
|---------------------------|--|
| <b>INTRODUCTION</b>       | A corneal foreign body (FB) is an object that is superficially adherent or embedded in the cornea. The removal of a corneal foreign body is typically performed in an office or emergency room setting. Symptoms include foreign body sensation, pain, tearing, light sensitivity, and decreased vision.   |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be assisted by a privileged Assistant Medical Officer (AMO).</li> <li>• All patients with corneal foreign bodies.</li> </ul>   |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• To remove foreign body (FB) embedded in the cornea.</li> </ul>  |
| <b>WORKFLOW</b>           |  <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive Patient]     Receive --&gt; Assess[Assess / Verify Patient /<br/>Correct Site / Allergy Status]     Assess --&gt; Fit{Fit for<br/>Procedure}     Fit -- No --&gt; Refer[Refer to Doctor]     Fit -- Yes --&gt; Equip[Prepare Equipment /<br/>Medication]     Equip --&gt; Prep[Prepare Patient]     Prep --&gt; Assist[Assist the<br/>Procedure]     Assist --&gt; Comp{Complication}     Comp -- Yes --&gt; Refer     Comp -- No --&gt; Clean[Cleaning and Sterilization of<br/>Microsurgical Instruments]     Clean --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End   </pre> |

| WORK INSTRUCTION  |  |                                   |  |
|---|--|-----------------------------------|--|
| ACTIVITY  | WORK PROCESS   | STANDARD                          | REQUIREMENT  |
| Receive Patient   | <ul style="list-style-type: none"> <li>• Register patient particulars in the record book</li> </ul>  | Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Patient appointment card/record</li> <li>• Referral letter.</li> <li>• Record book/census</li> </ul>  |
| Assess / Verify Patient / Correct Site / Allergy status | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Verify the correct site.</li> <li>• Verify correct procedure.</li> <li>• Verify allergy status</li> <li>• Ensure verbal consent has been taken.</li> </ul>     | Malaysian Patient Safety Goal 2.0 |  |
| Prepare Equipment / Medication                          | <ul style="list-style-type: none"> <li>• Make sure slit lamp works perfectly.</li> <li>• Prepare disposable items.</li> <li>• Prepare solutions.</li> <li>• Verify correct medication.</li> <li>• Check medication expiry date.</li> </ul> |                                   | <ul style="list-style-type: none"> <li>• Slit lamp.</li> <li>• Disposable items               <ol style="list-style-type: none"> <li>Disposable dressing set</li> <li>Fluorescein strips</li> <li>1ml/3ml syringe</li> <li>Needle 26G/27G</li> <li>Sterile gauze</li> <li>Sterile cotton bud</li> <li>Eye pads (if indicated)</li> <li>Eye shield</li> <li>Micropore tape</li> </ol> </li> <li>• Solutions               <ol style="list-style-type: none"> <li>Normal saline</li> </ol> </li> <li>• Medication               <ol style="list-style-type: none"> <li>Topical anaesthesia eye drops</li> <li>Topical antibiotics eye drops</li> </ol> </li> </ul> |
| Prepare Patient   | <ul style="list-style-type: none"> <li>• Explain the purpose of the procedure to the patient and / or relatives</li> <li>• Position the patient comfortably in a</li> </ul>  | <i>Manual Arahan Kerja</i>        |  |

|                      |  |   |  |
|----------------------|--|---|--|
|                      | sitting position at the slip lamp or in a supine position on the bed.  |   |  |
| Assist the Procedure | <ul style="list-style-type: none"> <li>• Instill topical anesthetic eye drops into the lower fornix.</li> <li>• Wash hands and gloves using an aseptic technique.</li> <li>• Examine the patient's eye to locate the foreign body.</li> <li>• Assist the doctor and wait for the next instructions</li> </ul> <p><u>Steps (Perform by doctor)</u></p> <ol style="list-style-type: none"> <li>1) Corneal foreign body<br/>Use a sterile needle 26G/27G to pick up and remove FB. Stain the cornea with fluorescein to determine the extent of epithelial defect.</li> <li>2) Apply antibiotic drops/ointment</li> <li>3) Apply eye pad/shield (if indicated)</li> </ol> | <ul style="list-style-type: none"> <li>• Topical anaesthesia eye drops</li> <li>• Sterile glove</li> <li>• Surgical face mask</li> </ul> <p><u>Steps (Hand over by AMO)</u></p> <ol style="list-style-type: none"> <li>1) 1cc Syringe with 26/27G needle and fluorescein strip</li> <li>2) Chloramphenicol 0.5%</li> <li>3) Eye pad/shield</li> </ol> |  |
| Health Education     | <ul style="list-style-type: none"> <li>• Monitor for redness or any infection</li> <li>• Compliance to medication.</li> </ul>  |   |  |
| Documentation        | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>   |   | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> </ul> |

**REFERENCE**

Mendelsohn, A., & Pokeza, N. (2023, September 10). *Removal of corneal foreign bodies*. EyeWiki. [https://eyewiki.org/Removal\\_of\\_Corneal\\_Foreign\\_Bodies](https://eyewiki.org/Removal_of_Corneal_Foreign_Bodies)

Carlos E Cao, M. (2023, September 21). *Corneal foreign body removal*. Overview, Indications, Contraindications. <https://emedicine.medscape.com/article/82717>

Brady, C. J. (2023, November 12). *How to remove a foreign body from the eye - eye disorders*. MSD Manual Professional Edition. <https://www.msmanuals.com/professional/eye-disorders/how-to-do-eye-procedures/how-to-remove-a-foreign-body-from-the-eye>

**CORNEAL SUTURE REMOVAL (STO CORNEA)**

|                           |  |
|---------------------------|--|
| <b>INTRODUCTION</b>       | Corneal sutures (stitches) are used as part of many ocular surgeries.-Once the cornea is judged to have healed, it is best to remove the sutures to prevent suture problems such as breakage, infection and corneal vascularisation, and to allow the cornea to achieve its final post-operative shape.  |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be assisted by a privileged Assistant Medical Officer (AMO).</li> <li>• All patients with cornea sutures if indicated</li> </ul>   |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• To remove sutures to prevent suture problems such as breakage, infection and corneal vascularisation.</li> <li>• To allow the cornea to achieve its final post-operative shape.</li> </ul>  |
| <b>WORKFLOW</b>           | <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive Patient]     Receive --&gt; Assess[Assess / Verify Patient /<br/>Correct Site / Allergy Status]     Assess --&gt; Fit{Fit for<br/>Procedure}     Fit -- No --&gt; Refer[Refer to Doctor]     Fit -- Yes --&gt; Equip[Prepare Equipment /<br/>Instruments/ Medication]     Equip --&gt; Prep[Prepare Patient]     Prep --&gt; Assist[Assist the<br/>Procedure]     Assist --&gt; Comp{Complication}     Comp -- Yes --&gt; Refer     Comp -- No --&gt; Clean[Cleaning and Sterilization of<br/>Microsurgical Instruments]     Clean --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End   </pre> |

| <b>WORK INSTRUCTION</b>                |  |                                   |  |
|--|--|-----------------------------------|--|
| <b>ACTIVITY</b>                        | <b>WORK PROCESS</b>  | <b>STANDARD</b>                   | <b>REQUIREMENT</b>   |
| Receive Patient                        | <ul style="list-style-type: none"> <li>• Register patient particulars in the patient's record book.</li> </ul>   | Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Patient appointment card/record</li> <li>• Referral letter.</li> <li>• Record book/census</li> </ul>  |
| Assess / Verify Patient / Correct Site | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Verify the correct site.</li> <li>• Verify correct procedure.</li> <li>• Ensure verbal consent has been taken.</li> </ul>  | Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Patient appointment card/record</li> </ul>  |
| Prepare Instruments / Equipment        | <ul style="list-style-type: none"> <li>• Prepare slit lamp machine.</li> <li>• Prepare supplementary instruments.</li> <li>• Prepare Disposable item</li> <li>• Verify correct medication.</li> <li>• Check the medication expiry date.</li> </ul> |                                   | <ul style="list-style-type: none"> <li>• Slit lamp machine.</li> <li>• Supplementary instruments               <ol style="list-style-type: none"> <li>Vannas scissors</li> <li>Suture-tying forceps</li> <li>Kidney dish</li> </ol> </li> <li>• Disposable item               <ol style="list-style-type: none"> <li>Sterile cotton bud</li> </ol> </li> <li>• Medication               <ol style="list-style-type: none"> <li>Topical anaesthesia eye drops</li> <li>Topical antibiotics eye drops</li> </ol> </li> </ul> |
| Prepare Patient                        | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Position the patient comfortably at a slit lamp or supine on the bed.</li> </ul>   | <i>Manual Arahan Kerja</i>        |  |
| Assist the Procedure                   | <ul style="list-style-type: none"> <li>• Instill topical anesthetic eye drops into the lower fornix.</li> </ul>  |                                   | <ul style="list-style-type: none"> <li>• Topical anaesthesia eye drops</li> </ul>  |

|  |   |   |   |
|--|---|---|---|
|  | <ul style="list-style-type: none"> <li>• Assist doctor and wait for the next instructions</li> </ul> <p><u>Steps (Perform by doctor)</u></p> <ol style="list-style-type: none"> <li>1) Cut the suture using Vannas scissors</li> <li>2) Remove the sutures using suture-tying forceps.</li> <li>3) Apply antibiotic eye drops or ointment.</li> </ol> |   | <p><u>Steps (Hand over by AMO)</u></p> <ol style="list-style-type: none"> <li>1) Vannas scissor</li> <li>2) Suture-tying forceps</li> <li>3) Topical antibiotics eye drops</li> </ol> |
| Cleaning And Sterilization of Microsurgery Instruments | Refer to Cleaning and sterilization of microsurgery instruments guidelines.   | Policies and Procedure on Infection Prevention and Control, MOH, 2018 (3 <sup>rd</sup> edition) | Refer to Cleaning and sterilization of microsurgery instruments guidelines.   |
| Health Education                                       | <ul style="list-style-type: none"> <li>• Importance of taking prescribed medication.</li> <li>• Encourage patients to seek emergency care if necessary.</li> <li>• Emphasize follow-up compliance</li> </ul>  |   |   |
| Documentation  | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>  |   | <ul style="list-style-type: none"> <li>• Procedure book/census.</li> </ul>  |

## REFERENCE

Mannis, M.J., & Holland, E.J. (2017). *Cornea Fundamentals, Diagnosis and Management*. Elsevier Inc.

Mohan, S. (2010). *Corneal suture removal*. Eyedocs.  
<https://www.eyedocs.co.uk/ophthalmology-articles/cornea/1844-corneal-suture-removal>

Pagano L, Shah H, Al Ibrahim O, Gadhvi KA, Coco G, Lee JW, Kaye SB, Levis HJ, Hamill KJ, Semeraro F, Romano V. Update on Suture Techniques in Corneal Transplantation: A Systematic Review. *J Clin Med*. 2022 Feb 18;11(4):1078. doi: 10.3390/jcm11041078. PMID: 35207352; PMCID: PMC8877912.

## Section B - Clinic Minor OT Procedures

| <b>SUBCONJUNCTIVA INJECTION</b> |   |
|---------------------------------|---|
| <b>INTRODUCTION</b>             | Subconjunctival injection of ocular drugs is a procedure to administer drugs under bulbar or palpebral conjunctiva. This allows the drugs to bypass the conjunctival epithelium barrier and deliver high drug concentrations to ocular structures.  |
| <b>SCOPE</b>                    | <ul style="list-style-type: none"> <li>The procedure will be assisted by a privileged Assistant Medical Officer (AMO).</li> <li>All patient requiring subconjunctiva injection as indicated</li> </ul>  |
| <b>SPECIFIC OBJECTIVE</b>       | <ul style="list-style-type: none"> <li>For treatment of lesion in the cornea, sclera, anterior uvea and vitreous</li> </ul>   |
| <b>WORKFLOW</b>                 | <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive Patient]     Receive --&gt; Assess[Assess / Verify Patient /<br/>Correct Site / Allergy Status]     Assess --&gt; Fit{Fit for<br/>Procedure}     Fit -- No --&gt; Refer[Refer to Doctor.]     Fit -- Yes --&gt; Equip[Prepare Equipment /<br/>Instruments/ Medication]     Equip --&gt; Prep[Prepare Patient]     Prep --&gt; Assist[Assist the<br/>Procedure]     Assist --&gt; Comp{Complication}     Comp -- Yes --&gt; Refer     Comp -- No --&gt; Clean[Cleaning and Sterilization of<br/>Microsurgical Instruments]     Clean --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End   </pre> |

| WORK INSTRUCTION  |   |   |   |
|---|---|---|---|
| ACTIVITY  | WORK PROCESS  | STANDARD  | REQUIREMENT   |
| Receive Patient   | <ul style="list-style-type: none"> <li>• Register patient particulars in record book</li> </ul>   | Malaysian Patient Safety Goal 2.0 (MPSG)                            | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Record book / census</li> </ul>   |
| Assess / Verify Patient / Correct Site / Allergy status | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Verify correct site.</li> <li>• Verify correct procedure.</li> <li>• Verify allergy status.</li> <li>• Ensure written consent has been taken.</li> </ul>          | <i>Manual Arahan Kerja</i><br><br>Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Signed consent form.</li> </ul>   |
| Prepare Instruments / Equipment / Medication            | <ul style="list-style-type: none"> <li>• Prepare complete &amp; sterile cleaning set.</li> <li>• Prepare supplementary instrument.</li> <li>• Disposable items</li> <li>• Prepare solutions.</li> <li>• Verify correct medication.</li> </ul> |   | <ul style="list-style-type: none"> <li>• Eye dressing set</li> <li>• Supplementary instruments               <ol style="list-style-type: none"> <li>Conjunctiva Forceps</li> <li>Eye speculum</li> <li>Cotton bud/eye sponge</li> </ol> </li> <li>• Disposable items               <ol style="list-style-type: none"> <li>Glove</li> <li>Cotton bud</li> <li>Syringe 3ml</li> <li>Syringe 5ml for water cornea</li> <li>Needle 20g</li> <li>Needle 26g</li> <li>Medication to be injected.</li> </ol> </li> <li>• Solutions               <ol style="list-style-type: none"> <li>Antiseptic solution</li> <li>Normal saline</li> </ol> </li> <li>• Medication               <ol style="list-style-type: none"> <li>Topical</li> </ol> </li> </ul> |

|  |  |   |   |
|--|--|---|---|
|  | <ul style="list-style-type: none"> <li>• Check medication expiry date.</li> </ul>  |   | Anaesthesia<br>ii. Topical Antibiotics  |
| Prepare Patient  | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Inform the patient about the procedure.</li> <li>• Position patient in supine on the table</li> <li>• Instil topical anaesthesia.</li> <li>• Clean and drape patient's eye with aseptic technique</li> </ul>   | <p>Malaysian Patient Safety Goal 2.0</p> <p><i>Manual Arahan Kerja</i></p>                      | <ul style="list-style-type: none"> <li>• Patient record</li> <li>• Topical Anesthesia</li> <li>• Eye Drape</li> <li>• Antiseptic solution</li> </ul>  |
| Assist the Procedure                                   | <ul style="list-style-type: none"> <li>• Wash hand and gloving.</li> <li>• Assist doctor and wait for the next instructions.</li> </ul> <p><u>Steps (Perform by doctor)</u></p> <ol style="list-style-type: none"> <li>1) Syringe out medication.</li> <li>2) Change to 26g needle to inject.</li> <li>3) Hold the conjunctiva.</li> <li>4) Inject medication.</li> <li>5) Apply pressure at injection site.</li> <li>6) Antibiotic</li> </ol> |   | <ul style="list-style-type: none"> <li>• Sterile glove</li> <li>• Plastic apron</li> </ul> <p><u>Steps (Hand over by AMO) to doctor</u></p> <ol style="list-style-type: none"> <li>1) Syringe 3ml and 20g needle</li> <li>2) 26g needle</li> <li>3) Conjunctiva forceps</li> <li>4) Syringe with medication</li> <li>5) Cotton bud/eye sponge</li> <li>6) Gutt. Antibiotic</li> </ol> |
| Cleaning And Sterilization of Microsurgery Instruments | Refer to Cleaning and sterilization of microsurgery instruments guideline.   | Policies and Procedure on Infection Prevention and control, MOH, 2018 (3 <sup>rd</sup> edition) | Refer to Cleaning and sterilization of microsurgery instruments guideline.  |

|                  |  |                            |  |
|------------------|--|----------------------------|--|
| Health Education | <ul style="list-style-type: none"> <li>• Eye care</li> <li>• Medication adherence</li> <li>• Monitor for side effects/complications.</li> <li>• Advise patients to go to the eye clinic during office hours and emergency department immediately after office hours if any complication occurs.</li> <li>• Emphasize on follow up compliance.</li> </ul> |                            |  |
| Documentation    | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>   | <i>Manual Arahan Kerja</i> | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> </ul> |

## REFERENCE

Wikimedia Foundation. (2020, August 30). Subconjunctival injection. Wikipedia. [https://en.wikipedia.org/wiki/Subconjunctival\\_injection](https://en.wikipedia.org/wiki/Subconjunctival_injection)

Panahibazaz, M., Moosavian, M., Khatamina, G., Fegghi, M., Yazdi, F., & Abbasi Montazeri, E. (2014, September). Sub-conjunctival injection of antibiotics vs. povidone-iodine drops on bacterial colonies in phacoemulsification cataract surgery. *Jundishapur journal of microbiology*. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4255380/>

Stevens, S. (2009, March). Administering a subconjunctival injection. *Community eye health*. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2683560/>

**SUBTENON INJECTION**

|                           |   |
|---------------------------|---|
| <b>INTRODUCTION</b>       | Sub tenon space is a space between sclera and tenon. Sub tenon injection drugs are performed to deliver medication into the sub tenon space. The procedure is performed under aseptic technique.  |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be assisted by a privileged Assistant Medical Officer (AMO).</li> <li>• All patient indicated for the procedure.</li> </ul>   |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• To deliver anesthesia agent</li> <li>• To deliver cortical steroid (triamcinolone)</li> <li>• To deliver Mesenchymal stem cell</li> </ul>  |
| <b>WORKFLOW</b>           | <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive Patient]     Receive --&gt; Assess[Assess / Verify Patient / Correct Site / Allergy Status]     Assess --&gt; Fit{Fit for Procedure}     Fit -- No --&gt; Refer[Refer to Doctor]     Fit -- Yes --&gt; PrepareInst[Prepare Instruments / Equipment / Medication]     PrepareInst --&gt; PreparePat[Prepare Patient]     PreparePat --&gt; Assist[Assist the Procedure]     Assist --&gt; Comp{Complication}     Comp -- Yes --&gt; Refer     Comp -- No --&gt; Clean[Cleaning and Sterilization of Microsurgical Instruments]     Clean --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End   </pre> |

| WORK INSTRUCTION  |   |   |   |
|---|---|---|---|
| ACTIVITY  | WORK PROCESS  | STANDARD  | REQUIREMENT   |
| Receive Patient   | <ul style="list-style-type: none"> <li>Register patient particulars in record book / census book</li> </ul>   | Malaysian Patient Safety Goal 2.0   | <ul style="list-style-type: none"> <li>Patient appointment card / record</li> <li>Record book / census book</li> </ul>  |
| Assess / Verify Patient / Correct Site / Allergy Status | <ul style="list-style-type: none"> <li>Verify correct patient</li> <li>Verify correct site</li> <li>Verify correct procedure</li> <li>Verify allergy status</li> <li>Ensure written consent has been taken</li> </ul>   | <p><i>Manual Arahan Kerja</i></p> <p>Safe Surgery Safe Life (SSSL)</p> <p>Malaysian Patient Safety Goal 2.0</p> | <ul style="list-style-type: none"> <li>Safe Surgery Safe Life (SSSL) Form</li> <li>Operation theatre (OT) list</li> <li>Consent form</li> </ul>   |
| Prepare Instruments / Equipment / Medication            | <ul style="list-style-type: none"> <li>Prepare complete &amp; sterile sub tenon injection set</li> <li>Verify correct medication</li> <li>Check medication expiry date</li> </ul> <p><u>Medication Preparation Step</u></p> <ul style="list-style-type: none"> <li>Withdraw medication using syringe (as required)</li> </ul> |   | <ul style="list-style-type: none"> <li>Dressing Set</li> <li>Sub tenon injection Set.               <ol style="list-style-type: none"> <li>Sub tenon needle</li> <li>Non tooth conjunctiva forceps</li> <li>Blunt conjunctiva scissors</li> <li>Eye speculum</li> </ol> </li> <li>Solutions               <ol style="list-style-type: none"> <li>Antiseptic</li> </ol> </li> <li>Disposable item               <ol style="list-style-type: none"> <li>Eye drape</li> <li>Syringe 3cc/5cc (as per request)</li> <li>23G needle</li> <li>Cotton bud (if necessary)</li> </ol> </li> <li>Medication               <ol style="list-style-type: none"> <li>Topical anaesthesia</li> <li>Local anaesthesia (Lignocaine and Marcaine)</li> </ol> </li> </ul> |

|                      |   |  |  |
|----------------------|---|--|--|
|                      | <p>and 23G needle with aseptic technique</p> <ul style="list-style-type: none"> <li>• Then mounted the sub tenon needle on that syringe</li> </ul>  |  | <p>iii. cortical steroid<br/>iv. Mesenchymal stem cell</p>   |
| Prepare Patient      | <ul style="list-style-type: none"> <li>• Inform the patient about the procedure</li> <li>• Position patient in supine on the couch</li> <li>• Clean and drape patient's eye with aseptic technique</li> </ul>   | <p>Malaysian Patient Safety Goal 2.0</p> <p><i>Manual Arahan Kerja</i></p> | <ul style="list-style-type: none"> <li>• Patient record</li> <li>• Antiseptic</li> <li>• Eye Drape</li> </ul>  |
| Assist the Procedure | <ul style="list-style-type: none"> <li>• Hand washing and gloving using aseptic technique and proper sterile attire</li> <li>• Assist doctor and wait for the next instructions</li> </ul> <p><u>Steps (Perform by doctor)</u></p> <ol style="list-style-type: none"> <li>1) An eyelid speculum is inserted to improve access and prevent blinking</li> <li>2) Asking the patient to look different side as medication</li> <li>3) A small tent of the conjunctiva and Tenon capsule is raised with a pair of blunt tip conjunctiva scissors, non-toothed conjunctiva forceps approximately 5-10 mm from the</li> </ol> |  | <ul style="list-style-type: none"> <li>• Sterile glove</li> </ul> <p><u>Steps (Hand over by AMO)</u></p> <ol style="list-style-type: none"> <li>1) Eye speculum</li> <li>2) Observe</li> <li>3) Non tooth conjunctiva forceps, Blunt tip conjunctiva scissors</li> </ol> |

|  |  |  |   |
|--|--|--|---|
|  | <p>inferior-nasal limbus</p> <p>4) A small incision is made in the tissue using a pair of blunt tip conjunctiva scissors, exposing the sclera below</p> <p>5) The blunt ended sub-Tenon's cannula can then be inserted, with the syringe of local anaesthetic attached, and passed posteriorly, following the curvature of the globe, until its tip is perceived to passed the equator</p> <p>6) Anaesthetic is injected slowly: smaller volumes (e.g., 2ml lignocaine) are typically adequate for analgesia, larger volumes (e.g., 3-5ml, sometimes more) if akinesia is also needed</p> <p>7) On injection of the local anaesthetic, little resistance is usually encountered and most of the solution should disappear behind</p> |  | <p>4)Blunt tip conjunctiva scissors</p> <p>5)Sub tenon cannula</p> <p>6)Medication as prepared</p> <p>7)Observe</p> |
|--|--|--|---|

|  |  |   |   |
|--|--|---|---|
|  | <p>the globe resulting in slight proptosis</p> <p>8) If resistance is encountered, the cannula can be withdrawn slightly and repositioned</p> <p>9) Clean the eye and instil eye drops/ointment as ordered</p> <p>10) Clean the instruments used for procedure</p> <p>11) Wash hands after procedure</p> |   | <p>8)Observe</p> <p>9)Observe</p>   |
| Cleaning And Sterilization of Microsurgery Instruments | Refer to Cleaning and sterilization of microsurgery instruments guideline  | Policies and Procedure on Infection Prevention and control, MOH, 2018 (3 <sup>rd</sup> edition) | Refer to Cleaning and sterilization of microsurgery instruments guideline.                        |
| Health Education                                       | <ul style="list-style-type: none"> <li>• Observe side complications (bleeding/swelling)</li> <li>• Advice patient to go to eye clinic during office hours or emergency department immediately after office hours if any complication occurs</li> <li>• Emphasize on follow up compliance</li> </ul>      |   |   |
| Documentation  | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>   | Safe Surgery Safe Life (SSSL)   | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> <li>• SSSL Form</li> </ul> |

**REFERENCE**

Amin, S., Minihan, M., Lesnik-Oberstein, S., & Carr, C. (2002, January). *A new technique for delivering sub-tenon's anaesthesia in ophthalmic surgery*. *The British journal of ophthalmology*. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1770964/>

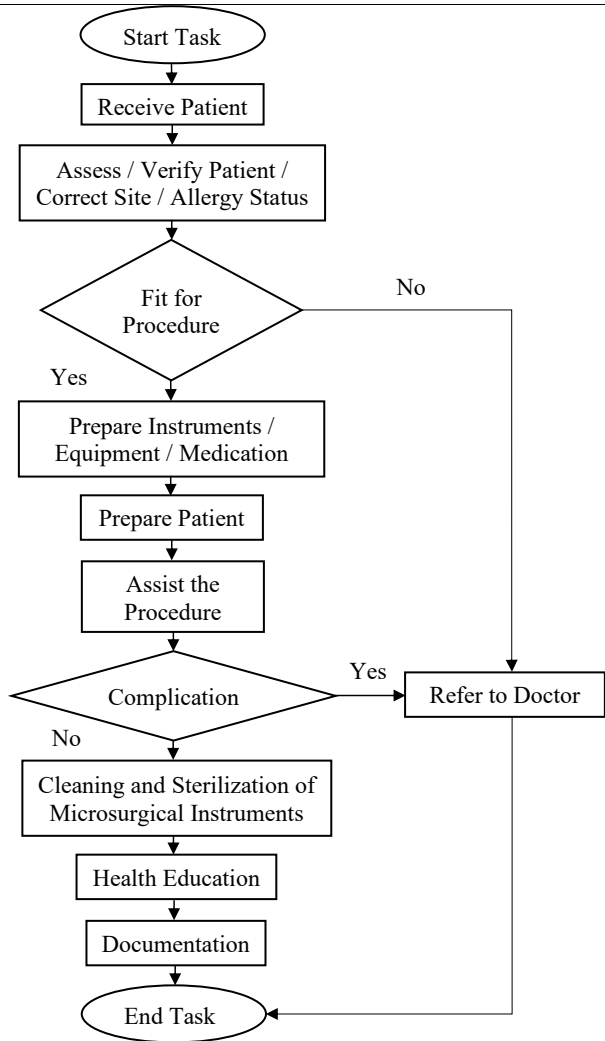
JOHN., D., ANDREW. OKADA, ANNABELLE. FORRESTER. (2019). *Practical manual of intraocular inflammation*. CRC PRESS.

Pavan-Langston, D., & Langston, D. P. (2008). *Manual of Ocular Diagnosis and therapy*. Wolters Kluwer Health/Lippincott Williams & Wilkins.

**INTRAVITREAL INJECTIONS**

|                           |  |
|---------------------------|--|
| <b>INTRODUCTION</b>       | Intravitreal injections are a procedure that enables highly targeted drug therapy, maximizing therapeutic drug delivery to the posterior pole while minimizing systemic toxicity.  |
| <b>SCOPE</b>              | <ul style="list-style-type: none"><li>• The procedure will be performed by a privileged Assistant Medical Officer (AMO).</li><li>• All patients requiring targeted drug for specific ocular conditions.</li></ul>  |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"><li>• Intravitreal injection of antibiotics or other drugs is performed in the treatment of specific ocular conditions.<ul style="list-style-type: none"><li>○ Macula oedema</li><li>○ Choroidal neovascularization</li><li>○ Intraocular infection</li><li>○ Intra inflammation</li><li>○ Intra tumour</li><li>○ Retinal detachment</li></ul></li></ul> |

## WORKFLOW



| WORK INSTRUCTION  |  |  |  |
|---|--|--|--|
| ACTIVITY  | WORK PROCESS   | STANDARD   | REQUIREMENT  |
| Receive Patient   | <ul style="list-style-type: none"> <li>Register patient particulars in record book</li> </ul>  | Malaysian Patient Safety Goal 2.0  | <ul style="list-style-type: none"> <li>Patient appointment card / record</li> <li>Record book / census</li> </ul>  |
| Assess / Verify Patient / Correct Site / Allergy status | <ul style="list-style-type: none"> <li>Verify correct patient</li> <li>Verify correct site</li> <li>Verify correct procedure</li> <li>Verify allergy status</li> <li>Ensure written consent has been taken</li> </ul>  | <i>Manual Arahan Kerja</i><br><br>Safe Surgery Safe Life (SSSL)<br><br>Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>Signed consent form</li> </ul>  |
| Prepare Instruments / Equipment / Medication            | <ul style="list-style-type: none"> <li>Prepare intravitreal instruments</li> <li>Prepare solutions</li> <li>Verify correct medication</li> <li>Check medication expiry date</li> </ul> <p><u>Medication Preparation Step</u></p> <ol style="list-style-type: none"> <li>1) Anti VEGF</li> <li>2) Antibiotic               <ol style="list-style-type: none"> <li>a) Vancomycin 2mg/0.1ml                   <ol style="list-style-type: none"> <li>i) The vial contains 500mg vancomycin powder</li> <li>ii) Reconstitute the vial with 10 ml of normal saline</li> <li>iii) Withdraw 4ml (200mg) and add 6ml of normal saline</li> <li>iv) Take 0.1ml (2mg)</li> </ol> </li> </ol> </li> </ol> |  | <ul style="list-style-type: none"> <li>Intravitreal instruments               <ol style="list-style-type: none"> <li>i. Eyelid speculum</li> <li>ii. Calipers</li> </ol> </li> <li>Disposable items               <ol style="list-style-type: none"> <li>i. Syringe</li> <li>ii. Needle 26/30g</li> <li>iii. Cotton bud</li> </ol> </li> <li>Solutions               <ol style="list-style-type: none"> <li>i. Antiseptic</li> </ol> </li> <li>Medication               <ol style="list-style-type: none"> <li>i. Intravitreal medication                   <ol style="list-style-type: none"> <li>a) Vancomycin 2mg/0.1ml</li> <li>b) Cefazidime 2mg/0.1ml</li> <li>c) Amphotericin B 0.005mg/0.1 ml</li> <li>d) Ganciclovir 2mg/0.1ml</li> <li>e)                       <ol style="list-style-type: none"> <li>ii. Topical Anesthesia</li> <li>iii. Topical Antibiotics</li> </ol> </li> </ol> </li> </ol> </li> </ul> |

|  |  |  |  |
|--|--|--|--|
|  | <p>b) Cefazidime<br/>2mg/0.1ml</p> <p>i) The vial contains 1g cefazidime powder</p> <p>ii) Reconstitute the vial with 10ml of normal saline / water for injection. Mix well</p> <p>iii) Withdraw 1ml (100mg) and add 4ml of normal saline / water for injection</p> <p>iv) Take 0.1ml (2mg)</p> <p>3) Antifungal</p> <p>a) Amphotericin B<br/>0.005mg/0.1ml</p> <p>i) The vial contains 50mg of Amphotericin B powder</p> <p>ii) Reconstitute the vial with 10 ml of water for injection</p> <p>iii) Withdraw 1ml (0.5mg) and add 9ml of sterile water for injection. Mix well</p> <p>iv) Take 0.1ml (0.005mg)</p> <p>4) Antiviral</p> <p>a) Ganciclovir<br/>(0.1ml/2mg)</p> |  |  |
|--|--|--|--|

|                      |   |  |   |
|----------------------|---|--|---|
|                      | <ul style="list-style-type: none"> <li>i) Take 1 vial of 500mg Ganciclovir and add 5ml water for injection (100mg/ml)</li> <li>ii) Withdraw 1ml and add 4ml of water injection</li> <li>iii) Withdraw 0.1ml (2mg)</li> </ul> <p>5) Antimetabolite/chemotherapy</p> <ul style="list-style-type: none"> <li>a) Prepared by pharmacy</li> </ul> <p>6) Anti-inflammatory</p> <ul style="list-style-type: none"> <li>i) Dexamethasone</li> </ul>             |  |   |
| Prepare Patient      | <ul style="list-style-type: none"> <li>• Confirm adequate dilation</li> <li>• Inform the patient about the procedure</li> <li>• Position patient in supine on the couch</li> <li>• Clean and drape patient's eye with aseptic technique</li> </ul>  | <p>Malaysian Patient Safety Goal 2.0</p> <p><i>Manual Arahan Kerja</i></p> | <ul style="list-style-type: none"> <li>• Patient record</li> <li>• Eye Drape</li> <li>• Antiseptic</li> </ul>   |
| Assist the Procedure | <ul style="list-style-type: none"> <li>• Wash hand and gloving</li> <li>• Assist doctor and wait for the next instructions</li> </ul> <p><u>Steps (Perform by doctor)</u></p> <ol style="list-style-type: none"> <li>1) Place patient in supine position</li> <li>2) Topical anaesthesia (wait 10-15 seconds before placing povidone-iodine)</li> <li>3) Antiseptic drops; ask patient to blink multiple times to spread the povidone-iodine</li> </ol> |  | <ul style="list-style-type: none"> <li>• Sterile glove</li> </ul> <p><u>Steps (Hand over by AMO) to doctor</u></p> <ol style="list-style-type: none"> <li>1) Observe</li> <li>2) Topical anesthesia drop</li> <li>3) Antiseptic solution</li> </ol> |

|                               |  |                           |   |
|-------------------------------|--|---------------------------|---|
|                               | <ol style="list-style-type: none"> <li>4) Place sterile eyelid speculum</li> <li>5) Rinse the antiseptic out of the patient's eye</li> <li>6) Mark the location of injection: 3.5mm for pseudophakia, 4.0 mm for phakic patients</li> <li>7) Have the patient look away from the injection site. For example, if injecting the right eye in the supratemporal quadrant, ask the patient to look down and to the left</li> <li>8) Hold syringe in dominant hand, and a cotton bud in the non-dominant hand</li> <li>9) Insert the needle at the marked site in a smooth and single motion, aiming for the mid-vitreous cavity</li> <li>10) Insert the needle about 1/2 length in (to make sure you are in the vitreous cavity and not in the suprachoroidal space)</li> <li>11) As you remove the needle, cover the injection site with a cotton bud that is in your non-dominant hand</li> <li>12) Drop antibiotic if necessary</li> </ol> |                           | <ol style="list-style-type: none"> <li>4) Eyelid speculum</li> <li>5) Observe</li> <li>6) Calipers</li> <li>7) Observe</li> <li>8) Syringe 1ml</li> <li>9) Needle 30g as ordered</li> <li>10) Cotton bud</li> <li>11) Observe</li> <li>12) Antibiotic drop</li> </ol> |
| Cleaning And Sterilization of | Refer to Cleaning and sterilization  | Policies and Procedure on | Refer to Cleaning and sterilization of  |

|                          |   |   |                                     |
|--------------------------|---|---|-------------------------------------|
| Microsurgery Instruments | microsurgery instruments guideline  | Infection Prevention and control, MOH, 2018 (3 <sup>rd</sup> edition) | microsurgery instruments guideline. |
| Health Education         | <ul style="list-style-type: none"> <li>• Reassure patients that they may see floaters which are due to air bubbles or the medication itself</li> <li>• Review endophthalmitis, retinal haemorrhage and retinal detachment symptoms and precautions</li> <li>• Observe side effects / complications</li> <li>• Taking medication</li> <li>• Advice patient to go to eye clinic during office hours or emergency department immediately after office hours if any complication occurs</li> <li>• Emphasize on follow up compliance</li> </ul> |   |                                     |
| Documentation            | • Record procedure  | <i>Manual Arahan Kerja</i>  | • Procedure book / census.          |

## REFERENCE

Blaha, G. R., Tilton, E. P., Barouch, F. C., & Marx, J. L. (2011). Randomized trial of anaesthetic methods for intravitreal injections. *Retina*, 31(3), 535–539. <https://doi.org/10.1097/iae.0b013e3181eac724>

*Intravitreal injections*. EyeWiki. (2023). [https://eyewiki.aao.org/Intravitreal\\_Injections](https://eyewiki.aao.org/Intravitreal_Injections)

Muralidhar, N., & Gandhi, R. (2014). Complications of intravitreal injections. *Intravitreal Injections*, 99–99. [https://doi.org/10.5005/jp/books/12170\\_9](https://doi.org/10.5005/jp/books/12170_9)

| <b>INTRACAMERAL INJECTION</b> |   |
|-------------------------------|---|
| <b>INTRODUCTION</b>           | Intracameral injection is a procedure injecting of therapeutic agent to the anterior segment of the eye through the cornea  |
| <b>SCOPE</b>                  | <ul style="list-style-type: none"> <li>• The procedure will be performed by a privileged Assistant Medical Officer (AMO).</li> <li>• All patient indicated to receive therapeutic agent</li> </ul>  |
| <b>SPECIFIC OBJECTIVE</b>     | Intracameral injection can be local anesthesia, antibiotic, gas, recombinant tissue plasminogen activator (rtPA) or viscoelastic.   |
| <b>WORKFLOW</b>               | <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive Patient]     Receive --&gt; Assess[Assess / Verify Patient /<br/>Correct Site / Allergy Status]     Assess --&gt; Fit{Fit for<br/>Procedure}     Fit -- Yes --&gt; Prepare[Prepare Instruments /<br/>Equipment / Medication]     Prepare --&gt; Prep[Prepare Patient]     Prep --&gt; Assist[Assist the<br/>Procedure]     Assist --&gt; Comp{Complication}     Comp -- Yes --&gt; Refer[Refer to Doctor]     Comp -- No --&gt; Clean[Cleaning and Sterilization of<br/>Microsurgical Instruments]     Clean --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End     Fit -- No --&gt; Refer   </pre> |

| WORK INSTRUCTION  |  |   |   |
|---|--|---|---|
| ACTIVITY  | WORK PROCESS   | STANDARD  | REQUIREMENT   |
| Receive Patient   | <ul style="list-style-type: none"> <li>Register patient particulars in record book</li> </ul>  | Malaysian Patient Safety Goal 2.0   | <ul style="list-style-type: none"> <li>Patient appointment card / record</li> <li>Record book / census</li> </ul>   |
| Assess / Verify Patient / Correct Site / Allergy status | <ul style="list-style-type: none"> <li>Verify correct patient</li> <li>Verify correct site</li> <li>Verify correct procedure</li> <li>Verify allergy status</li> <li>Ensure written consent has been taken</li> </ul>  | <p><i>Manual Arahan Kerja</i></p> <p>Safe Surgery Safe Life (SSSL)</p> <p>Malaysian Patient Safety Goal 2.0</p> | <ul style="list-style-type: none"> <li>Patient appointment card / record</li> <li>Safe Surgery Safe Life (SSSL) Form</li> <li>Signed consent form</li> </ul>  |
| Prepare Instruments / Equipment / Medication            | <ul style="list-style-type: none"> <li>Prepare instruments</li> <li>Prepare disposable items</li> <li>Prepare solutions</li> <li>Prepare medication</li> <li>Verify correct medication</li> <li>Check medication expiry date</li> </ul> <p><u>Medication Preparation Step</u></p> <p>1) Local Anaesthesia</p> <p>a. Withdraw Lignocaine 2% 0.1ml using syringe 1ml</p> <p>2) Antibiotic Cefuroxime 0.1mg</p> |   | <ul style="list-style-type: none"> <li>Instruments                             <ol style="list-style-type: none"> <li>Colibri Forceps</li> <li>Conjunctiva Forceps</li> </ol> </li> <li>Disposable items                             <ol style="list-style-type: none"> <li>15-degree knife</li> <li>Needle 26G</li> <li>Rycroft cannula 27G</li> <li>Fluorescein strip</li> </ol> </li> <li>Solutions                             <ol style="list-style-type: none"> <li>Antiseptic</li> </ol> </li> <li>Medication                             <ol style="list-style-type: none"> <li>Topical Anaesthesia</li> <li>Topical Steroid</li> <li>Topical Antibiotics</li> <li>Ophthalmic Viscosurgical Devices (OVD)</li> </ol> </li> <li>1ml syringe</li> <li>Needle 26G</li> <li>Syringe 10ml</li> </ul> |

|                      |   |  |  |
|----------------------|---|--|--|
|                      | <ul style="list-style-type: none"> <li>i. The vial contains 750mg cefuroxime powder</li> <li>ii. Reconstitute the vial with 7.5 ml normal saline</li> <li>iii. Withdraw 0.1ml (0.1mg) using 1ml syringe</li> </ul> <p>3) Gas perfluoro propane (C3F8) / sulphur hexafluoride (SF6)</p> <ul style="list-style-type: none"> <li>a) Withdraw 0.3ml gas using 1ml syringe via air filter</li> </ul>   |  | <ul style="list-style-type: none"> <li>• Syringe 1ml</li> <li>• Needle 21G</li> <li>• Normal saline</li> <br/> <li>• Syringe 1ml</li> <li>• Air filter</li> </ul>  |
| Prepare Patient      | <ul style="list-style-type: none"> <li>• Verify correct patient</li> <li>• Confirm adequate dilatation</li> <li>• Inform the patient about the procedure</li> <li>• Position patient in supine on the bed</li> <li>• Clean and drape patient's eye with aseptic technique</li> </ul>  | <p>Malaysian Patient Safety Goal 2.0</p> <p><i>Manual Arahan Kerja</i></p> | <ul style="list-style-type: none"> <li>• Patient record</li> <li>• Eye Drape</li> <li>• Antiseptic</li> </ul>  |
| Assist the Procedure | <ul style="list-style-type: none"> <li>• Wash hand and gloving.</li> <li>• Assist doctor and wait for the next instructions</li> </ul> <p><u>Steps (Perform by doctor)</u></p> <ol style="list-style-type: none"> <li>1) Topical anaesthesia (wait 10-15 seconds before placing antiseptic)</li> <li>2) Antiseptic drops; ask patient to blink multiple times to spread the antiseptic</li> <li>3) Place sterile eyelid speculum</li> <li>4) Rinse the antiseptic out of the patient's eye</li> </ol> |  | <ul style="list-style-type: none"> <li>• Sterile glove</li> </ul> <p><u>Steps (Hand over by AMO) to doctor</u></p> <ol style="list-style-type: none"> <li>1) Topical anaesthesia</li> <li>2) Antiseptic</li> <li>3) Eyelid speculum</li> <li>4) Observe</li> </ol> |

|  |  |   |  |
|--|--|---|--|
|  | <ol style="list-style-type: none"> <li>5) Make incision at the side port using 15-degree knife</li> <li>6) Place Rycroft cannula 27G on syringe</li> <li>7) Inject the medication to the intracameral</li> <li>8) Assess any leakage to the cornea. Fluorescein strip if necessary</li> <li>9) Assess IOP digitally</li> <li>10) Remove all instrument. Clean up the site</li> <li>11) Drop antibiotic (if necessary)</li> </ol> |   | <ol style="list-style-type: none"> <li>5) 15-degree knife</li> <li>6) Rycroft cannula 27G</li> <li>7) Observe</li> <li>8) Fluorescein strip (if necessary)</li> <li>9) Observe</li> <li>10) Clean up the site.</li> <li>11) Antibiotic (if necessary)</li> </ol> |
| Cleaning And Sterilization of Microsurgery Instruments | Refer to Cleaning and sterilization of microsurgery instruments guideline  | Policies and Procedure on Infection Prevention and control, MOH, 2018 (3 <sup>rd</sup> edition) | Refer to Cleaning and sterilization of microsurgery instruments guideline.   |
| Health Education                                       | <ul style="list-style-type: none"> <li>• Care of the wound</li> <li>• Positioning may need in intracameral of gases</li> <li>• Taking medication</li> <li>• Observe side effects / complications</li> <li>• Advice patient to go to eye clinic during office hour and emergency department immediately after office hour if any complication occurs</li> <li>• Emphasize on follow up compliance</li> </ul>                      |   |  |
| Documentation  | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>   | <i>Manual Arahana Kerja</i>   | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> </ul>   |

**REFERENCES**

Aprokam cefuroxime 50mg powder for solution for injection - summary of product characteristics (SmPC) - (EMC). (2020). <https://www.medicines.org.uk/emc/medicine/27397>

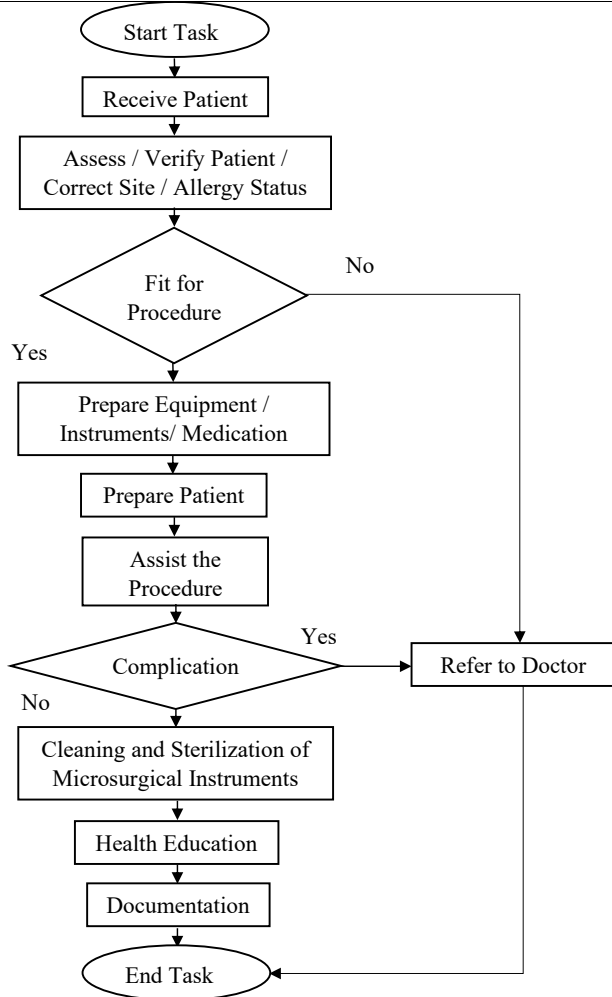
Christopher Kent, S. E. (2015, April 15). *Antibiotics & cataract surgery: New frontiers*. Review of Ophthalmology. <https://www.reviewofophthalmology.com/article/antibiotics--cataract-surgery-new-frontiers>

Hersh, P. S., Zigelbaum, B. M., & Cremers, S. L. (2009). *Ophthalmic Surgical Procedures*. Thieme.

Wikimedia Foundation. (2022, June 29). *Intracameral injection*. Wikipedia. [https://en.wikipedia.org/wiki/Intracameral\\_injection](https://en.wikipedia.org/wiki/Intracameral_injection)

**INCISION AND CURETTAGE (I&C) OF CHALAZION**

|                           |   |
|---------------------------|---|
| <b>INTRODUCTION</b>       | A chalazion is a common and benign eye disease, characterized by a blockage of the meibomian gland. Incision and curettage (I&C) are a surgical method used for the treatment of chalazion. |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be assisted by a privileged Assistant Medical Officer (AMO).</li> <li>• All patient with chalazion if indicated.</li> </ul>     |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• To treat unresolved chalazion or large and symptomatic chalazion.</li> </ul>   |

**WORKFLOW**

| WORK INSTRUCTION  |   |                                   |  |
|---|---|-----------------------------------|--|
| ACTIVITY  | WORK PROCESS  | STANDARD                          | REQUIREMENT  |
| Receive Patient   | <ul style="list-style-type: none"> <li>• Register patient particulars in record book</li> </ul>   | Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Patients' appointment card / record.</li> <li>• Record book / census</li> <li>• Referral letter</li> </ul>  |
| Assess / Verify Patient / Correct Site / Allergy status | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Verify correct site.</li> <li>• Verify correct procedure.</li> <li>• Verify allergy status.</li> <li>• Ensure written consent has been taken.</li> </ul>  | Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Patients' appointment card / record.</li> <li>• Signed consent form</li> </ul>  |
| Prepare Instruments / Equipment / Medication            | <ul style="list-style-type: none"> <li>• Prepare complete &amp; sterile I&amp;C set.</li> <li>• Prepare supplementary equipment.</li> <li>• Prepare disposable items.</li> <li>• Prepare solutions.</li> <li>• Verify correct medication.</li> <li>• Check medication expiry date.</li> </ul> |                                   | <ul style="list-style-type: none"> <li>• I&amp;C Set</li> <li>• <b>*Refer Appendix 2</b></li> <li>• Cataract towel</li> <li>• Disposable items               <ol style="list-style-type: none"> <li>Surgical blade size 11</li> <li>Cotton bud</li> <li>Eye pad</li> </ol> </li> <li>• Solutions               <ol style="list-style-type: none"> <li>Antiseptic solution</li> </ol> </li> <li>• Medication               <ol style="list-style-type: none"> <li>Local anaesthesia injection</li> <li>Topical anaesthesia eye drop</li> <li>Topical antibiotic eye drop</li> </ol> </li> </ul> |
| Prepare Patient   | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Inform the patient about the procedure.</li> <li>• Position patient in comfortable position</li> <li>• Clean and drape patient's eye with</li> </ul>  | Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Eye Drape</li> </ul>  |

|  |  |   |  |
|--|--|---|--|
|  | clean / aseptic technique  |   | <ul style="list-style-type: none"> <li>• Antiseptic solution</li> </ul>  |
| Assist the Procedure                                   | <ul style="list-style-type: none"> <li>• Wash hand and gloving.</li> <li>• Assist doctor and wait for the next instructions.</li> </ul> <p><u>Steps (Perform by doctor)</u></p> <ol style="list-style-type: none"> <li>1) Inject local anaesthesia at chalazion area.</li> <li>2) Clamp the chalazion site.</li> <li>3) Make an incision.</li> <li>4) Scrape out the contents of the chalazion.</li> <li>5) Clean the wound site.</li> <li>6) Place antibiotic ointment at the incision site.</li> <li>7) Cover patient's eye with eye pad.</li> </ol> |   | <ul style="list-style-type: none"> <li>• Sterile glove</li> </ul> <p><u>Steps (Hand over by AMO) to doctor</u></p> <ol style="list-style-type: none"> <li>1) Local Anaesthesia (Inj. Lignocaine 2% in 2ml)</li> <li>2) Chalazion clamp</li> <li>3) Blade size 11</li> <li>4) Curette</li> <li>5) Cotton bud</li> <li>6) Topical Antibiotics</li> <li>7) Eye pad</li> </ol> |
| Cleaning And Sterilization of Microsurgery Instruments | Refer to Cleaning and sterilization of microsurgery instruments guideline.   | Policies and Procedure on Infection Prevention and control, MOH, 2018 (3 <sup>rd</sup> edition) | Refer to Cleaning and sterilization of microsurgery instruments guideline.   |

|                  |   |  |   |
|------------------|---|--|---|
| Health Education | <ul style="list-style-type: none"> <li>• Wound Care- Observe any bleeding / complications.</li> <li>• Advised patients to go to eye clinic during office hours or emergency department immediately after office hour if any complication occurs.</li> <li>• Compliance to medication and follow up appointment</li> </ul> |  |   |
| Documentation    | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>  |  | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> <li>• Patient appointment card / record</li> </ul> |

## REFERENCE

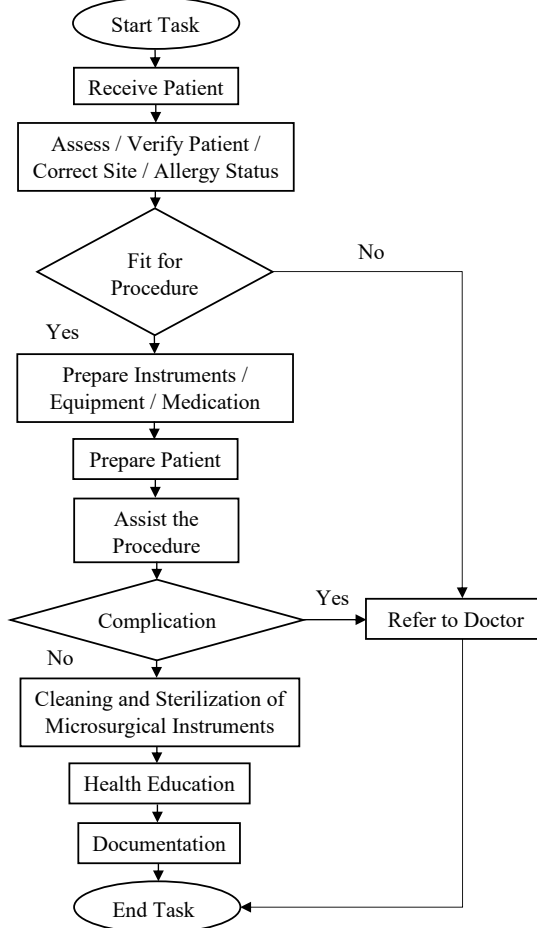
*How Is Chalazion Treatment Done in Malaysia?* (2020, September 18). Sunway Eye Centre - Eye Specialists in Malaysia. <https://sunwayeyecentre.com.my/chalazion-treatment-malaysia/>

Marsden, J. (2008). *An Evidence Base for Ophthalmic Nursing Practice*. John Wiley & Sons.

M Edward Wilson, Saunders, R. A., & Trivedi, R. H. (2009). *Paediatric Ophthalmology: Current Thought and A Practical Guide*. Springer Berlin Heidelberg.

**CORNEA GLUING**

|                           |  |
|---------------------------|--|
| <b>INTRODUCTION</b>       | Corneal gluing with cyanoacrylate glue is a temporary procedure. It is done temporarily giving time to allow healing of the underlying condition with medical treatment or temporarily so that integrity of the globe is restored while awaiting definitive surgery. |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be assisted by a privileged Assistant Medical Officer (AMO).</li> <li>• All patients with impending corneal perforation as indicated</li> </ul>  |
| <b>SPECIFIC OBJECTIVE</b> | To seal perforations or threatened perforations or reinforce areas of extreme thinning with cyanoacrylate glue.  |

**WORKFLOW**

| <b>WORK INSTRUCTION</b>                                |   |                                   |   |
|--|---|-----------------------------------|---|
| <b>ACTIVITY</b>  | <b>WORK PROCESS</b>   | <b>STANDARD</b>                   | <b>REQUIREMENT</b>  |
| Receive Patient  | <ul style="list-style-type: none"> <li>• Register patient particulars in the record book</li> </ul>   | Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Patient appointment card/record</li> <li>• Referral letter</li> <li>• Record book/census</li> </ul>  |
| Assess / Verify Patient / Correct Site/ Allergy status | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Verify the correct site.</li> <li>• Verify correct procedure.</li> <li>• Verify allergy status</li> <li>• Ensure written consent has been taken.</li> </ul> | Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Patient appointment card/record</li> <li>• Signed consent form.</li> </ul>   |
| Prepare Instruments / Equipment / Medication           | <ul style="list-style-type: none"> <li>• Make sure the microscope machine or loupe works perfectly.</li> <li>• Prepare supplementary instruments</li> <li>• Prepare disposable items</li> </ul>   |                                   | <ul style="list-style-type: none"> <li>• Microscope machine or loupe</li> <li>• Supplementary instruments               <ol style="list-style-type: none"> <li>i. Eye speculum</li> <li>ii. Calliper</li> <li>iii. Corneal forceps</li> <li>iv. Dermatology punch</li> </ol> </li> <li>• Disposable items               <ol style="list-style-type: none"> <li>i. Dressing set</li> <li>ii. Cotton buds and sponge spears</li> <li>iii. Surgical eye drape/cataract towel</li> <li>iv. Fluorescein strips</li> <li>v. Syringe 1cc</li> <li>vi. Syringe 5cc</li> <li>vii. Rycroft cannula</li> <li>viii. 27G needle</li> <li>ix. Disc (if required)</li> </ol> </li> </ul> |

|                      |   |                            |  |
|----------------------|---|----------------------------|--|
|                      | <ul style="list-style-type: none"> <li>• Prepare solutions</li> <li>• Verify correct medication.</li> <li>• Check the medication expiry date.</li> </ul>  |                            | <p>x. Bandage Contact Lens (BCL)</p> <ul style="list-style-type: none"> <li>• Solutions <ul style="list-style-type: none"> <li>i. Povidone Iodine 5%</li> <li>ii. Balance salt solution (BSS)</li> </ul> </li> <li>• Medication <ul style="list-style-type: none"> <li>i. Topical anaesthesia eye drop</li> <li>ii. Topical antibiotics eye drops</li> </ul> </li> </ul> |
| Prepare Patient      | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Explain the purpose of and the procedure to patient and/or relatives</li> <li>• Position the patient comfortably in supine position</li> <li>• Ensure good lighting</li> </ul>  | <i>Manual Arahan Kerja</i> |  |
| Assist the Procedure | <ul style="list-style-type: none"> <li>• Wash hand and gloving.</li> <li>• Assist the doctor and wait for the next instructions</li> </ul> <p><u>Steps (Perform by doctor)</u></p> <ol style="list-style-type: none"> <li>1) Area cleaned and draped.</li> <li>2) Topical anesthesia is used.</li> <li>3) Identify the perforation site with a fluorescence strip.</li> </ol> | <i>Manual Arahan Kerja</i> | <ul style="list-style-type: none"> <li>• Sterile glove</li> <li>• Surgical face mask</li> </ul> <p><u>Steps (Hand over by AMO)</u></p> <ol style="list-style-type: none"> <li>1) Eye drape/cataract towel</li> <li>2) Gutt Proparacaine hydrochloride 0.5%</li> <li>3) Fluorescence strip</li> </ol>   |

|  |  |   |   |
|--|--|---|---|
|  | <p>4) Measure the perforated area and thinning size.</p> <p>5) Prepare the disc.</p> <p>6) Glue is syringed out and a drop of glue is placed on the disc</p> <p>7) Dry the site of the gluing area.</p> <p>8) Glue with disc is applied to the site of perforation</p> <p>9) Wait 10-20 seconds until the glue stabilized and dried</p> <p>10) The Seidel test is done</p> <p>11) A BCL is applied</p> |   | <p>4) Callipers</p> <p>5) Dermatology punch</p> <p>6) Cyanoacrylate glue in 1cc syringe and disc</p> <p>7) Sponge spears</p> <p>8) Observe</p> <p>9) Observe</p> <p>10) Fluorescent strip</p> <p>11) Bandage Contact Lens</p> |
| Cleaning And Sterilization of Microsurgery Instruments | Refer to Cleaning and sterilization of microsurgery instruments guidelines.  | Policies and Procedure on Infection Prevention and Control, MOH, 2018 (3 <sup>rd</sup> edition) | Refer to Cleaning and sterilization of microsurgery instruments guidelines.   |
| Health Education                                       | <ul style="list-style-type: none"> <li>• Wash hands well when applying the medication</li> <li>• Observe BCL in site</li> <li>• Monitor for an eye infection</li> <li>• Avoid rubbing eyes frequently</li> </ul>   |   |   |
| Documentation  | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>   |   | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> </ul>  |

**REFERENCE**

Mannis, M. J., & Holland, E. J. (2022). *Cornea: Fundamentals, diagnosis, and Management*. Elsevier.

M. Nehls, S. (2013, February 18). *Tissue adhesives for repair of corneal perforations*. American Academy of Ophthalmology. <https://www.aaopt.org/current-insight/tissue-adhesives-repair-of-corneal-perforations>

Vote, B. J., & Elder, M. J. (2000). Cyanoacrylate glue for corneal perforations: a description of a surgical technique and a review of the literature. *Clinical & experimental ophthalmology*, 28(6), 437–442. <https://doi.org/10.1046/j.1442-9071.2000.00351.x>

| <b>CORNEA SCRAPPING</b>   |  |
|---------------------------|--|
| <b>INTRODUCTION</b>       | Corneal ulcers are caused by microorganisms. Scraping of corneal ulcers for cultures could help to identify the specific type of causative pathogens and allow managing doctors to tailor treatment accordingly.   |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be assisted by a privileged Assistant Medical Officer (AMO).</li> <li>• All patients with cornea ulcer</li> </ul>  |
| <b>SPECIFIC OBJECTIVE</b> | To detect and differentiate various pathogens of cornea infection, e.g., bacteria, fungi, Acanthamoeba, and other atypical organisms.  |
| <b>WORKFLOW</b>           | <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive Patient]     Receive --&gt; Assess[Assess / Verify Patient /<br/>Correct Site / Allergy Status]     Assess --&gt; Fit{Fit for<br/>Procedure}     Fit -- No --&gt; Refer[Refer to Doctor]     Fit -- Yes --&gt; Equip[Prepare Equipment /<br/>Instruments/ Medication]     Equip --&gt; Prep[Prepare Patient]     Prep --&gt; Assist[Assist the<br/>Procedure]     Assist --&gt; Comp{Complication}     Comp -- Yes --&gt; Refer     Comp -- No --&gt; Clean[Cleaning and Sterilization of<br/>Microsurgical Instruments]     Clean --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End   </pre> |

| <b>WORK INSTRUCTION</b>                                 |  |                                   |   |
|---|--|-----------------------------------|---|
| <b>ACTIVITY</b>   | <b>WORK PROCESS</b>  | <b>STANDARD</b>                   | <b>REQUIREMENT</b>  |
| Receive Patient   | <ul style="list-style-type: none"> <li>• Register patient particulars in record book</li> </ul>  | Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Patient appointment card/record</li> <li>• Referral letter</li> <li>• Record book/census</li> </ul>  |
| Assess / Verify Patient / Correct Site / Allergy status | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Verify correct site.</li> <li>• Verify correct procedure.</li> <li>• Verify allergy status</li> <li>• Ensure verbal consent has been taken.</li> </ul> | Malaysian Patient Safety Goal 2.0 |   |
| Prepare Instruments / Equipment                         | <ul style="list-style-type: none"> <li>• Prepare instrument.</li> <li>• Prepare disposable items</li> <li>• Verify correct medication.</li> <li>• Check the medication expiry date.</li> </ul>                                     |                                   | <ul style="list-style-type: none"> <li>• Kimura spatula</li> <li>• Disposable items               <ol style="list-style-type: none"> <li>i. Disposable dressing set</li> <li>ii. Blood agar plate</li> <li>iii. Chocolate agar</li> <li>iv. Sabouraud dextrose agar</li> <li>v. Fastidious anaerobe agar</li> <li>vi. Microscope slide</li> <li>vii. Sterile swabs with transport medium</li> <li>viii. Needle 23G</li> </ol> </li> <li>• Medication               <ol style="list-style-type: none"> <li>i. Topical anaesthesia eye drops</li> </ol> </li> </ul> |
| Prepare Patient   | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Explain the purpose of and the procedure to patient and/or relatives</li> </ul>  | <i>Manual Arahan Kerja</i>        |   |

|                      |  |  |   |
|----------------------|--|--|---|
|                      | <ul style="list-style-type: none"> <li>• Position the patient comfortably at the slit lamp.</li> </ul>   |  |   |
| Assist the Procedure | <ul style="list-style-type: none"> <li>• Wash hands and wait for the next instructions</li> </ul> <p><u>Steps (Perform by doctor)</u></p> <ol style="list-style-type: none"> <li>1) Instill topical anesthetic eye drops.</li> <li>2) A Kimura spatula or 26G needle is used to scrape the edge of the ulcer.</li> <li>3) Needle 26G is used to collect specimens for each of the four agar plates, using a fresh needle 26G every time.</li> <li>4) Another new needle 26G is used to deposit the specimen onto the center of a glass microscope slide.</li> <li>5) The area is circled, and the slide is labeled with the patient's details.</li> <li>6) Ensure that all specimens are adequately labeled and sent to microbiology immediately.</li> <li>7) Complete a microbiology request form providing details of the patient's provisional diagnosis and</li> </ol> |  | <p><u>Steps (Hand over by AMO)</u></p> <ol style="list-style-type: none"> <li>1) Proparacaine hydrochloride ophthalmic solution 0.5%</li> <li>2) Kimura spatula or 26G needle</li> <li>3) Four Agar plates</li> <li>4) Needle 26G and Glass microscope slide</li> <li>5) marker pen, sticker to label specimens</li> <li>6) PER-PAT form</li> </ol> |

|  |   |   |  |
|--|---|---|--|
|  | current antimicrobials  |   |  |
| Cleaning And Sterilization of Microsurgery Instruments | Refer to Cleaning and sterilization of microsurgery instruments guideline.  | Policies and Procedure on Infection Prevention and control, MOH, 2018 (3 <sup>rd</sup> edition) | Refer to Cleaning and sterilization of microsurgery instruments guidelines.  |
| Health Education                                       | <ul style="list-style-type: none"> <li>• Advise patients on post-operative activities and restrictions.</li> <li>• Instruct patients on proper administration of eye drops.</li> <li>• Monitor for any potential adverse effects or complications</li> <li>• Adherence to prescribed medication</li> <li>• Encourage patients to seek emergency care if necessary.</li> <li>• Emphasize follow-up compliance</li> </ul> |   |  |
| Documentation  | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>  |   | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> </ul> |

## REFERENCE

Mannis, M. J., & Holland, E. J. (2022). *Cornea: Fundamentals, diagnosis, and Management*. Elsevier.

Lee, O. L. (2023, February 25). *Beginner's Guide to Corneal Ulcers*. American Academy of Ophthalmology. <https://www.aao.org/young-ophthalmologists/yo-info/article/beginner-s-guide-to-corneal-ulcers>

Fairbanks, A. M., Provencher, L. M., Greiner, M. A., & Sindt, C. (2016). *Culturing the Cornea*. EyeRounds.org: Cornea culture. <https://webeye.ophth.uiowa.edu/eyeforum/tutorials/Cornea-Culture/index.htm>

Robinson, J. (2016, April 15). *Collecting a corneal culture*. Review of Optometry. <https://www.reviewofoptometry.com/article/collecting-a-corneal-culture>

| <b>TARSORRHAPHY</b>       |  |
|---------------------------|--|
| <b>INTRODUCTION</b>       | Tarsorrhaphy is a surgical procedure wherein the eyelids are partially sewn together. It is performed on patients suffering from various ocular conditions such as the inability to close the eye lid placing the cornea at risk of drying and non-healing neurotrophic corneal ulcer. The procedure's main goal is to keep the eyelids partially shut so moisture can be retained in the affected eye and aid in healing.   |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be assisted by privileged Assistant Medical Officer (AMO).</li> <li>• All patient with severe cornea condition requiring partial lid closure.</li> </ul>   |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• To protect the cornea from exposure.</li> <li>• To treat of nonhealing epithelium defects, corneal surface disease, and other ocular and eyelid disorders.</li> </ul>   |
| <b>WORKFLOW</b>           | <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive patient]     Receive --&gt; Assess[Assess / verify patient / correct site]     Assess --&gt; Fit{Fit for Procedure?}     Fit -- No --&gt; Refer[Refer to doctor]     Fit -- Yes --&gt; Prep[Prepare instruments / equipment/ medication]     Prep --&gt; Patient[Prepare patient]     Patient --&gt; Assist[Assist the procedure]     Assist --&gt; Clean[Cleaning and Sterilization of Microsurgical Instruments]     Clean --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End   </pre> |

| <b>WORK INSTRUCTION</b>                                 |  |                                   |  |
|---|--|-----------------------------------|--|
| <b>ACTIVITY</b>   | <b>WORK PROCESS</b>  | <b>STANDARD</b>                   | <b>REQUIREMENT</b>   |
| Receive Patient   | <ul style="list-style-type: none"> <li>• Register patient particulars in record book</li> </ul>  | Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Patient appointment card/record</li> <li>• Record book/census</li> </ul>  |
| Assess / Verify Patient / Correct Site / Allergy Status | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Verify correct site.</li> <li>• Verify correct procedure.</li> <li>• Verify allergy status.</li> <li>• Ensure written consent has been taken.</li> </ul> | Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Signed consent form</li> </ul>  |
| Prepare Instruments / Equipment / Medication            | <ul style="list-style-type: none"> <li>• Prepare complete &amp; sterile dressing set.</li> <li>• Prepare supplementary instruments</li> <li>• Prepare solutions.</li> <li>• Prepare disposable item.</li> </ul>                      |                                   | <ul style="list-style-type: none"> <li>• Dressing Set</li> <li>• Supplementary instruments               <ol style="list-style-type: none"> <li>Tooth Forceps</li> <li>Non-tooth forcep</li> <li>Needle holder</li> <li>Straight scissors</li> </ol> </li> <li>• Solutions               <ol style="list-style-type: none"> <li>Antiseptic solution</li> <li>Normal saline</li> </ol> </li> <li>• Disposable item               <ol style="list-style-type: none"> <li>Silk 4-0 suture</li> <li>3ml syringe</li> <li>Sterile Needle 23G &amp; 26G</li> <li>Butterfly needle tubing</li> <li>Sterile gauze</li> <li>Sterile cotton bud</li> <li>Eye pads</li> </ol> </li> </ul> |

|                      |   |                            |   |
|----------------------|---|----------------------------|---|
|                      | <ul style="list-style-type: none"> <li>• Verify correct medication.</li> <li>• Check medication expiry date.</li> </ul>   |                            | <ul style="list-style-type: none"> <li>• Medication <ul style="list-style-type: none"> <li>i. Topical anaesthesia eye drops</li> <li>ii. Local anaesthesia</li> <li>iii. Ointment</li> </ul> </li> <li>Antibiotics</li> </ul> |
| Prepare Patient      | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Explain the purpose of and the procedure to patient and / or relatives.</li> <li>• Position the patient comfortably in supine position.</li> <li>• Instil topical anaesthetic eye drops into the lower fornix.</li> <li>• Clean and drape patient's eye with clean / aseptic technique</li> </ul>   | <i>Manual Arahan Kerja</i> |   |
| Assist the Procedure | <ul style="list-style-type: none"> <li>• Hand washing and gloving using aseptic technique.</li> <li>• Clean and drape patient's eye with aseptic technique</li> <li>• Assist doctor and wait for the next instructions</li> </ul> <p><u>Steps (Perform by doctor)</u></p> <p>1) Anaesthetize the central area of both the upper and lower eyelids with an injection of a few milliliters of local anesthetic (e.g. lidocaine 1–2% or bupivacaine 0.5%).</p> |                            | <ul style="list-style-type: none"> <li>• Surgical face mask</li> <li>• Sterile glove</li> </ul> <p><u>Steps (Hand over by AMO)</u></p> <p>1) 3cc syringe with 23G needle to syringe out local anesthetic</p>                  |

|  |  |   |  |
|--|--|---|--|
|  | <p>2) Prepare two bolsters to prevent the suture from cutting into the skin.</p> <p>3) Suture Silk 4.0 is placed on the upper and lower eye lid with the bolster to allow secure closure of the lid margins.</p> <p>4) Antibiotic ointment is placed over the site of tarsorrhaphy</p> |   | <p>2) butterfly needle tubing and straight scissor</p> <p>3) Suture 4.0 silk with needle holder, tooth forcep, non-tooth forcep and, straight scissor</p> <p>4) Chloramphenicol eye ointment</p> |
| Cleaning And Sterilization of Microsurgery Instruments | Refer to Cleaning and sterilization of microsurgery instruments guideline.   | Policies and Procedure on Infection Prevention and control, MOH, 2018 (3 <sup>rd</sup> edition) | Refer to Cleaning and sterilization of microsurgery instruments guideline.   |
| Health Education                                       | <ul style="list-style-type: none"> <li>• Monitor for pain, infections, and swelling</li> <li>• Apply antibiotic eye drops or ointment.</li> </ul>  |   |  |
| Documentation  | <ul style="list-style-type: none"> <li>• Record any complication</li> </ul>  |   | <ul style="list-style-type: none"> <li>• Patient record</li> <li>• Procedure book / census.</li> </ul>   |

**REFERENCE**

Cosar, C. B., Cohen, E. J., Rapuano, C. J., Maus, M., Penne, R. P., Flanagan, J. C., & Laibson, P. R. (2001). Tarsorrhaphy: clinical experience from a cornea practice. *Cornea*, 20(8), 787–791. <https://doi.org/10.1097/00003226-200111000-00002>

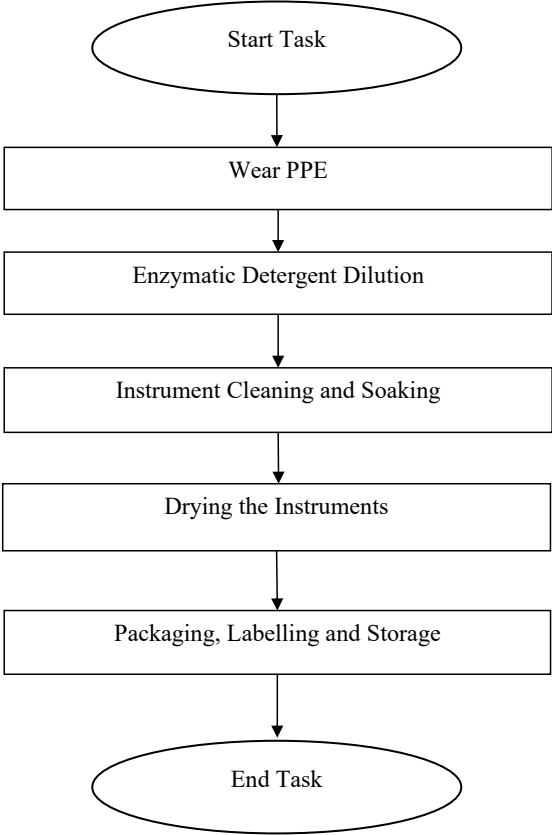
Fowler, B. T., Panovec, C., Anbar, F., Laplant, J., & Rennlovett. (2023). *Tarsorrhaphy*. EyeWiki. <https://eyewiki.aao.org/Tarsorrhaphy>

Coelho, N.M., et al (2022). Tarsorrhaphy- principles and clinical applications. <https://eucornea.scholasticahq.com>

Rajak, S., Rajak, J., & Selva, D. (2015). Performing a tarsorrhaphy. *Community eye health*, 28(89), 10–11.

## Section C – Operation Room Procedures (Assisting in Ophthalmic Surgeries)

### CLEANING AND STERILIZATION OF MICROSURGICAL INSTRUMENTS

|                           |  |
|---------------------------|--|
| <b>INTRODUCTION</b>       | Ophthalmic surgical instruments are delicate. The instrument damage often occurs during assisting the surgeon and cleaning process. Therefore, meticulous handling and care of the instruments is essential. Sterilisation is a process that kills, deactivates or eliminates all forms of life and other biological agents. Methods of sterilisation include heat, chemical, irradiation, high pressure and filtration.   |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be performed by a privileged Assistant Medical Officer (AMO).</li> <li>• All used non sterile microsurgical instruments.</li> </ul>  |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• To clean and sterilise microsurgical instruments.</li> </ul>  |
| <b>WORKFLOW</b>           |  <pre> graph TD     Start([Start Task]) --&gt; PPE[Wear PPE]     PPE --&gt; Detergent[Enzymatic Detergent Dilution]     Detergent --&gt; Soaking[Instrument Cleaning and Soaking]     Soaking --&gt; Drying[Drying the Instruments]     Drying --&gt; Storage[Packaging, Labelling and Storage]     Storage --&gt; End([End Task])   </pre> <p>The workflow is a vertical sequence of steps: Start Task (oval), Wear PPE (rectangle), Enzymatic Detergent Dilution (rectangle), Instrument Cleaning and Soaking (rectangle), Drying the Instruments (rectangle), Packaging, Labelling and Storage (rectangle), and End Task (oval). Arrows indicate the downward flow from one step to the next.</p> |

| WORK INSTRUCTION                |  |  |   |
|---------------------------------|--|--|---|
| ACTIVITY                        | WORK PROCESS   | STANDARD   | REQUIREMENT   |
| Wear PPE                        | Wear proper Personal Protective Equipment (PPE) before handling contaminated instruments   | Policies and Procedures on Infection Prevention and Control, MOH, 2018 | <ul style="list-style-type: none"> <li>• Disposable gowning (plastic)</li> <li>• Disposable glove</li> <li>• Face shield / goggle</li> </ul>  |
| Enzymatic Detergent Dilution    | <ul style="list-style-type: none"> <li>• Dilute enzymatic detergent according to manufacturer's instruction</li> <li>• Ensure to change diluted detergent solution daily</li> </ul>  | Detergent Manufacture's Instruction                                    | <ul style="list-style-type: none"> <li>• Neutral pH enzymatic detergent</li> <li>• Sterile water</li> </ul>   |
| Instrument Cleaning and Soaking | <p><b><u>Hinged/ non-hinged instruments</u></b></p> <ol style="list-style-type: none"> <li>1) Instruments should be completely opened or disassembled in order to expose all parts of the instruments</li> <li>2) Fully open any hinged instruments for thorough cleaning</li> <li>3) Rub or scrub soiled area with brush and rinse</li> <li>4) Clean instruments using ultrasonic cleaner (if available)</li> <li>5) Soak rinsed instruments with neutral pH enzyme detergent</li> <li>6) Presoaked or rinsed instruments in contact with enzymatic detergent with sterile water</li> </ol> | Policies and Procedures on Infection Prevention and Control, MOH, 2018 | <ul style="list-style-type: none"> <li>• Soaking Tray x 2</li> <li>• Neutral pH enzymatic cleaner</li> <li>• Ultrasonic cleaner (if available)</li> <li>• Sterile water</li> <li>• Soft bristle brush</li> <li>• Syringe</li> </ul> |

|                                  |   |  |  |
|----------------------------------|---|--|--|
|                                  | <p><b><u>Lumened instruments</u></b></p> <ol style="list-style-type: none"> <li>1) Flush instrument with lumen using sterile water and neutral pH enzyme detergent</li> <li>2) Flush thoroughly to remove the debris and the ophthalmic viscoelastic totally to avoid any post-op reaction</li> <li>3) Rinse instruments thoroughly that comes in contact with enzyme detergent with sterile water and followed by compressed air</li> </ol>                              |  |  |
| Drying the Instruments           | Dry instruments thoroughly and arrange in rigid container   | Policies and Procedures on Infection Prevention and Control, MOH, 2018 | <ul style="list-style-type: none"> <li>• Dry, lint-free towel</li> </ul>   |
| Packaging, Labelling and Storage | <ul style="list-style-type: none"> <li>• Cover instrument with silicon tube</li> <li>• Wrap instrument either individually or in sets</li> <li>• Wrap container with two sheets of medical crepe paper or pack with medical plastic pouches</li> <li>• Container wrapped with medical crepe paper is secured with autoclave tape</li> <li>• Insert a steam indicator strip in the container (if available)</li> <li>• Label package with staff's initial, date</li> </ul> | Policies and Procedures on Infection Prevention and Control, MOH, 2018 | <ul style="list-style-type: none"> <li>• Medical crepe paper</li> <li>• Medical plastic pouch</li> <li>• Steam indicator strip</li> <li>• Autoclave tape steam indicator (if available)</li> <li>• Autoclave machine (refer to OT staff)</li> <li>• Designated shelves</li> <li>• Suitable cupboard</li> </ul> |

|  |   |  |  |
|--|---|--|--|
|  | <p>of autoclaving and location of storage</p> <ul style="list-style-type: none"> <li>• Ready for autoclaving (refer to OT Staff)</li> <li>• Sterilised item must be examined for any sign of wet packs (visible dampness, droplets, or puddled water), tear in packaging, or the seal is broken. If any of these signs occur, the package should be resterilised</li> <li>• Surgery set &amp; instruments should not be stored on floors or windowsill</li> <li>• Designated shelves or counters are most recommendable</li> <li>• Prior to use, surgery sets and instruments should be visually inspected for integrity and labelling</li> </ul> |  |  |
|--|---|--|--|

## REFERENCES

Ablett, A.-M. (2018, June 1). *Decontamination and sterilisation of surgical instruments and medical devices*. Eye News.

<https://www.eyenews.uk.com/education/trainees/post/decontamination-and-sterilisation-of-surgical-instruments-and-medical-devices>

*How Do You Sterilise and Clean Surgical Instruments?* Cairn Technology. (2023, April 10). <https://www.steris.com/healthcare/knowledge-center/infection-prevention/cleaning-and-disinfecting-surgical-instruments>

*Cleaning | Disinfection & Sterilization Guidelines | Guidelines Library | Infection Control | CDC.* (2019, April 4). [www.cdc.gov](https://www.cdc.gov/infectioncontrol/guidelines/disinfection/cleaning.html#:~:text=Surgical%20instruments%20should%20be%20presoaked). <https://www.cdc.gov/infectioncontrol/guidelines/disinfection/cleaning.html#:~:text=Surgical%20instruments%20should%20be%20presoaked>

**EXAMINATION UNDER ANAESTHESIA (EUA)**

|                           |  |
|---------------------------|--|
| <b>INTRODUCTION</b>       | EUA is an examination of the patient eye while under general anesthesia for diagnosis and monitoring of ocular conditions.   |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be assisted by a privileged Assistant Medical Officer (AMO).</li> <li>• All patient who unable to tolerate to complete eye examination in outpatient clinic setting.</li> </ul>  |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• For diagnosis of ocular condition</li> <li>• Assessment of ocular condition</li> <li>• To perform complete eye examination in paediatrics cases as well as certain adult patient</li> <li>• For monitor ocular condition of above patient</li> </ul>  |
| <b>WORKFLOW</b>           | <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive Patient]     Receive --&gt; Assess[Assess / Verify Patient /<br/>Correct Site / Allergy Status]     Assess --&gt; Fit{Fit for<br/>Procedure}     Fit -- No --&gt; Refer[Refer to Doctor]     Fit -- Yes --&gt; Equip[Prepare Equipment /<br/>Instruments/ Medication]     Equip --&gt; Prep[Prepare Patient]     Prep --&gt; Assist[Assist the<br/>Procedure]     Assist --&gt; Comp{Complication}     Comp -- Yes --&gt; Refer     Comp -- No --&gt; Clean[Cleaning and Sterilization of<br/>Microsurgical Instruments]     Clean --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End   </pre> |

| WORK INSTRUCTION  |   |  |  |
|---|---|--|--|
| ACTIVITY  | WORK PROCESS  | STANDARD   | REQUIREMENT  |
| Receive Patient   | <ul style="list-style-type: none"> <li>Record the patient's particulars in the patient registration book.</li> </ul>  | Malaysian Patient Safety Goal 2.0  | <ul style="list-style-type: none"> <li>Patient appointment card / record</li> <li>Patient's registration book</li> </ul>   |
| Assess / Verify Patient / Correct Site / Allergy Status | <ul style="list-style-type: none"> <li>Verify correct patient</li> <li>Verify correct site</li> <li>Verify correct procedure</li> <li>Verify allergy status</li> <li>Ensure written consent has been taken</li> </ul>           | <i>Manual Arahan Kerja</i><br><br>Safe Surgery Safe Life (SSSL)<br><br>Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>Safe Surgery Safe Life (SSSL) Form</li> <li>Operation Theater (OT) list</li> <li>Signed consent form</li> </ul>   |
| Prepare Instruments / Equipment                         | <ul style="list-style-type: none"> <li>Prepare complete &amp; sterile EUA set</li> <li>Prepare disposable items</li> <li>Prepare correct medication</li> <li>Check medication expiry date</li> <li>Prepare equipment</li> </ul> |  | <ul style="list-style-type: none"> <li>EUA Set.               <ol style="list-style-type: none"> <li>Speculum</li> <li>Conjunctiva forceps</li> <li>Calipers</li> </ol> </li> <li>Disposable item               <ol style="list-style-type: none"> <li>Cotton swab (if necessary)</li> <li>Cotton bud (if necessary)</li> </ol> </li> <li>Medication               <ol style="list-style-type: none"> <li>Dilating eye drop</li> </ol> </li> <li>Binocular Indirect Ophthalmoscopy (BIO)</li> <li>Handheld tonometer</li> <li>A Scan (optional)</li> <li>B Scan (optional)</li> <li>Portable fundus camera (optional)</li> </ul> |
| Prepare Patient   | <ul style="list-style-type: none"> <li>Inform the patient / relatives about the procedure</li> </ul>  | Malaysian Patient Safety Goal 2.0  | <ul style="list-style-type: none"> <li>Patient record</li> <li>Dilating eye drop</li> </ul>  |

|                      | <ul style="list-style-type: none"> <li>• Position patient in supine</li> <li>• Clean patient's eye</li> </ul>   | <i>Manual<br/>Kerja</i> | <i>Arahan</i>   |
|----------------------|---|-------------------------|---|
| Assist the Procedure | <ul style="list-style-type: none"> <li>• Hand washing technique</li> <li>• Assist doctor and wait for the next instructions</li> </ul> <p><u>Steps (Perform by doctor)</u></p> <ol style="list-style-type: none"> <li>1) Position the patient supine and allow the anesthesia team to administer medication to induce a deep sleep and monitor vital signs.</li> <li>2) Insert a sterile eyelid speculum.</li> <li>3) Begin the examination.</li> <li>4) Perform a complete eye examination.</li> <li>5) Remove all instruments and clean up the site.</li> <li>6) Drop antibiotic eye drops if necessary.</li> </ol> |                         | <p><u>Steps (Hand over by AMO)</u></p> <ol style="list-style-type: none"> <li>1) Observe</li> <li>2) Speculum</li> <li>3) Pass surgical instruments to the surgeon as needed during the procedure.               <ol style="list-style-type: none"> <li>a) Conjunctiva forceps</li> <li>b) Calipers</li> <li>c) Disposable items                   <ol style="list-style-type: none"> <li>i. Cotton swab (if necessary)</li> <li>ii. Cotton bud (if necessary)</li> <li>iii. Medication (Dilating drop)</li> <li>iv. BIO</li> <li>v. Handheld tonometer</li> <li>vi. A Scan (optional)</li> <li>vii. B Scan (optional)</li> </ol> </li> </ol> </li> <li>4) Observe</li> <li>5) Observe</li> <li>6) Drop medication as per request.</li> </ol> |

|  |   |   |   |
|--|---|---|---|
| Cleaning And Sterilization of Microsurgery Instruments | Refer to Cleaning and sterilization of microsurgery instruments guideline   | Policies and Procedure on Infection Prevention and control, MOH, 2018 (3 <sup>rd</sup> edition) | Refer to Cleaning and sterilization of microsurgery instruments guideline.                        |
| Health Education                                       | <ul style="list-style-type: none"> <li>• Observe side effects / complications</li> <li>• Taking medication</li> <li>• Advice patient to go to eye clinic during office hour and emergency department immediately after office hour if any complication occurs</li> <li>• Emphasize on follow up compliance</li> </ul> |   |   |
| Documentation  | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>  | Safe Surgery Safe Life (SSSL)   | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> <li>• SSSL Form</li> </ul> |

**REFERENCE**

Carlson, N. B., & Kurtz, D. (2016). *Clinical procedures for ocular examination*. McGraw-Hill Education.

*Home*. Cincinnati Childrens. (2022). <https://www.cincinnatichildrens.org/health/e/eua>

Ultra-widefield imaging for paediatric retinal disease. (2018). *Asia-Pacific Journal of Ophthalmology*. <https://doi.org/10.22608/apo.2018100>

**AQUEOUS TAP / PARACENTESIS**

|                           |   |
|---------------------------|---|
| <b>INTRODUCTION</b>       | A clinical procedure and its usefulness in helping to distinguish between infective and inflammatory infection  |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be assisted by a privileged Assistant Medical Officer (AMO).</li> <li>• All patient requires aqueous tap</li> </ul>   |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• Therapeutic (paracentesis) to reduce intra ocular pressure</li> <li>• Diagnostic for intra ocular infection</li> </ul>   |
| <b>WORKFLOW</b>           | <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive Patient]     Receive --&gt; Assess[Assess / Verify Patient /<br/>Correct Site / Allergy Status]     Assess --&gt; Fit{Fit for<br/>Procedure}     Fit -- No --&gt; Refer[Refer to Doctor]     Fit -- Yes --&gt; Prepare[Prepare Instruments /<br/>Equipment / Medication]     Prepare --&gt; Prep[Prepare Patient]     Prep --&gt; Assist[Assist the<br/>Procedure]     Assist --&gt; Comp{Complication}     Comp -- Yes --&gt; Refer     Comp -- No --&gt; Clean[Cleaning and Sterilization of<br/>Microsurgical Instruments]     Clean --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End   </pre> |

| WORK INSTRUCTION  |  |   |  |
|---|--|---|--|
| ACTIVITY  | WORK PROCESS   | STANDARD  | REQUIREMENT  |
| Receive Patient   | <ul style="list-style-type: none"> <li>Register patient particulars in patient's record book</li> </ul>  | Malaysian Patient Safety Goal 2.0   | <ul style="list-style-type: none"> <li>Patient appointment card / record</li> <li>Record book / census</li> </ul>  |
| Assess / Verify Patient / Correct Site / Allergy Status | <ul style="list-style-type: none"> <li>Verify correct patient</li> <li>Verify correct site.</li> <li>Verify correct procedure</li> <li>Verify allergy status</li> <li>Ensure written consent has been taken</li> </ul> | <p><i>Manual Arahan Kerja</i></p> <p>Safe Surgery Safe Life (SSSL)</p> <p>Malaysian Patient Safety Goal 2.0</p> | <ul style="list-style-type: none"> <li>Safe Surgery Safe Life (SSSL) Form</li> <li>Operation theatre (OT) list</li> <li>Signed consent form</li> </ul>   |
| Prepare Instruments / Equipment / Medication            | <ul style="list-style-type: none"> <li>Prepare complete &amp; sterile Tapping set</li> <li>Prepare supplementary instruments</li> <li>Prepare solution</li> <li>Prepare Disposable item</li> <li>Medication</li> </ul> |   | <ul style="list-style-type: none"> <li>Tapping set:               <ol style="list-style-type: none"> <li>Speculum</li> <li>Conjunctiva forceps</li> <li>Calliper</li> </ol> </li> <li>Supplementary instruments:               <ol style="list-style-type: none"> <li>Kidney dish</li> <li>Eye cleaning set</li> </ol> </li> <li>Solutions:               <ol style="list-style-type: none"> <li>Povidone iodine</li> <li>Normal saline</li> </ol> </li> <li>Disposable item:               <ol style="list-style-type: none"> <li>Eye drape</li> <li>Syringe 1ml x 2</li> <li>Sterile gauze and cotton bud</li> <li>Sterile surgical glove</li> <li>Needle 21G and 26G</li> <li>Eye pad</li> </ol> </li> <li>Medication:               <ol style="list-style-type: none"> <li>Topical anaesthesia</li> <li>Topical Antibiotics</li> </ol> </li> </ul> |
| Prepare Patient   | <ul style="list-style-type: none"> <li>Verify correct patient</li> <li>Inform the patient about the procedure</li> </ul>   | <p>Malaysian Patient Safety Goal 2.0</p> <p><i>Manual Arahan Kerja</i></p>                                      | <ul style="list-style-type: none"> <li>Patient record</li> </ul>   |

|  |   |   |   |
|--|---|---|---|
|  | <ul style="list-style-type: none"> <li>• Position patient in supine on the OT table</li> <li>• Clean and drape patient's eye with aseptic technique</li> </ul>  |   | <ul style="list-style-type: none"> <li>• Antiseptic</li> <li>• Eye Drape</li> </ul>   |
| Assist the Procedure                                   | <ul style="list-style-type: none"> <li>• Wash and dry hand.</li> <li>• Wear gown &amp; gloves</li> <li>• Clean and drape the eye</li> </ul> <p><u>Steps (Perform by doctor)</u></p> <ol style="list-style-type: none"> <li>1) 2 units Syringe 1ml and 2 units 30G needle</li> <li>2) Remove plunger from syringe (paracentesis) to the limbus</li> <li>3) Inject syringe to limbus to withdraw the aqueous</li> <li>4) Cotton bud is passed to doctor to compress the wound</li> <li>5) The specimen will be collected and send to lab for further investigation</li> <li>6) Apply eye pad</li> </ol> |   | <ul style="list-style-type: none"> <li>• OT gown</li> <li>• Sterile glove</li> <li>• Eye Drape</li> </ul> <p><u>Steps (Hand over by AMO)</u></p> <ol style="list-style-type: none"> <li>1) 2 sets of 1ml syringe and 30G needle</li> <li>2) Observe</li> <li>3) Observe</li> <li>4) Cotton bud</li> <li>5) Agar plate and Culture &amp; Sensitivity bottle</li> <li>6) Eye pad</li> </ol> |
| Cleaning And Sterilization of Microsurgery Instruments | Refer to Cleaning and sterilization of microsurgery instruments guideline   | Policies and Procedure on Infection Prevention and control, MOH, 2018 (3 <sup>rd</sup> edition) | Refer to Cleaning and sterilization of microsurgery instruments guideline   |
| Health Education                                       | <ul style="list-style-type: none"> <li>• Post-operative care</li> <li>• Positioning as indicated and cleanliness of surgical site</li> <li>• Observe side effects / complications</li> <li>• Medication compliance</li> <li>• Emphasize on follow up compliance</li> </ul>  |   |   |

|               |  |                               |  |
|---------------|--|-------------------------------|--|
| Documentation | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul> | Safe Surgery Safe Life (SSSL) | <ul style="list-style-type: none"> <li>• Procedure book / census</li> <li>• SSSL Form</li> </ul> |
|---------------|--|-------------------------------|--|

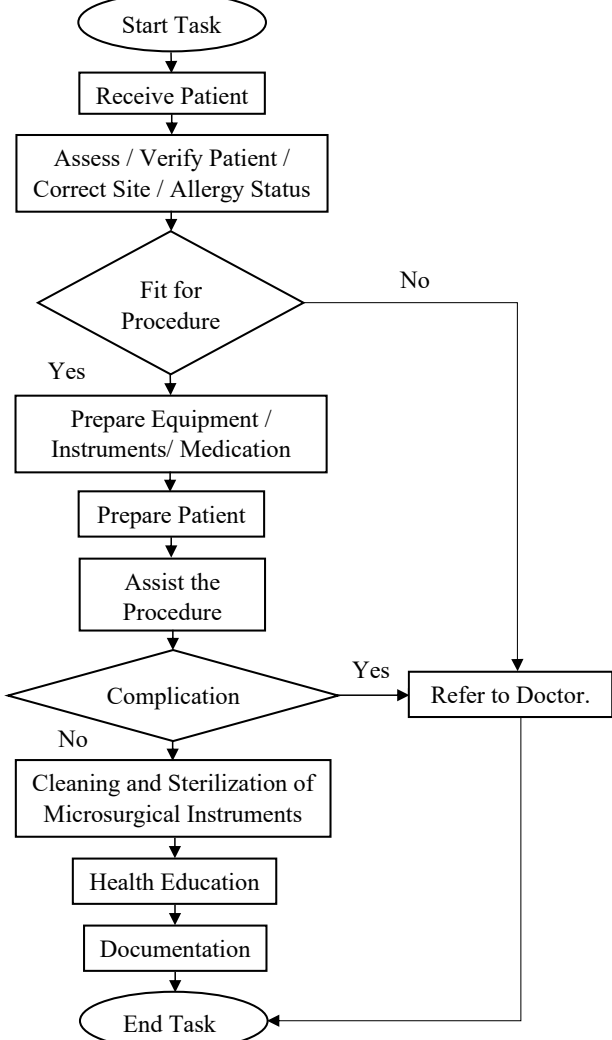
## REFERENCE

AlBloushi, A. F., Ajamil-Rodanes, S., Testi, I., Wagland, C., Grant-McKenzie, N., & Pavesio, C. (2021). Diagnostic value of culture results from aqueous tap versus vitreous tap in cases of bacterial endophthalmitis. *British Journal of Ophthalmology*. <https://doi.org/10.1136/bjophthalmol-2021-318916>

Becker, M. D., & Davis, J. L. (2008). *Surgical management of inflammatory eye disease*. Springer.

Feng, H. L., Robbins, C. B., & Fekrat, S. (2020). *A Nine-Year Analysis of Practice Patterns, Microbiologic Yield, and Clinical Outcomes in Cases of Presumed Infectious Endophthalmitis*. 4(6), 555–559.

**PTERYGIUM EXCISION**

|                           |  |
|---------------------------|--|
| <b>INTRODUCTION</b>       | Pterygium is a benign noncancerous growth that develops on the conjunctiva or mucous membrane that covers the white part of your eye. It is usually triangular in shape. In some cases, a pterygium can extend to the cornea. Pterygium excision with conjunctiva autograft is considered the current gold standard treatment.   |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be assisted by a privileged Assistant Medical Officer (AMO).</li> <li>• All patient with advance pterygium.</li> </ul>   |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• Advance pterygium encroaching visual axis.</li> <li>• Advance pterygium causes significant astigmatism.</li> <li>• Advance pterygium causing visual disturbances.</li> </ul>  |
| <b>WORKFLOW</b>           |  <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive Patient]     Receive --&gt; Assess[Assess / Verify Patient /<br/>Correct Site / Allergy Status]     Assess --&gt; Fit{Fit for<br/>Procedure}     Fit -- No --&gt; Refer[Refer to Doctor.]     Fit -- Yes --&gt; Equip[Prepare Equipment /<br/>Instruments/ Medication]     Equip --&gt; Prep[Prepare Patient]     Prep --&gt; Assist[Assist the<br/>Procedure]     Assist --&gt; Comp{Complication}     Comp -- Yes --&gt; Refer     Comp -- No --&gt; Clean[Cleaning and Sterilization of<br/>Microsurgical Instruments]     Clean --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End   </pre> <p>The workflow for Pterygium Excision is as follows:</p> <ol style="list-style-type: none"> <li>Start Task</li> <li>Receive Patient</li> <li>Assess / Verify Patient / Correct Site / Allergy Status</li> <li>Decision: Fit for Procedure       <ul style="list-style-type: none"> <li>If No: Refer to Doctor.</li> <li>If Yes: Proceed to Prepare Equipment / Instruments/ Medication.</li> </ul> </li> <li>Prepare Patient</li> <li>Assist the Procedure</li> <li>Decision: Complication       <ul style="list-style-type: none"> <li>If Yes: Refer to Doctor.</li> <li>If No: Proceed to Cleaning and Sterilization of Microsurgical Instruments.</li> </ul> </li> <li>Cleaning and Sterilization of Microsurgical Instruments</li> <li>Health Education</li> <li>Documentation</li> <li>End Task</li> </ol> |

| WORK INSTRUCTION  |  |  |  |
|---|--|--|--|
| ACTIVITY  | WORK PROCESS   | STANDARD   | REQUIREMENT  |
| Receive Patient   | <ul style="list-style-type: none"> <li>• Register patient particulars in OT book.</li> </ul>   | Malaysian Patient Safety Goal 2.0 (MPSG)   | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Record book / census</li> </ul>  |
| Assess / Verify Patient / Correct Site / Allergy Status | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Verify correct site.</li> <li>• Verify correct procedure.</li> <li>• Verify allergy status.</li> <li>• Ensure written consent has been taken.</li> </ul>   | <i>Manual Arahan Kerja</i><br><br>Safe Surgery Safe Life (SSSL)<br><br>Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Safe Surgery Safe Life (SSSL) Form</li> <li>• Operation theatre (OT) list</li> <li>• Signed consent form.</li> </ul>  |
| Prepare Instruments / Equipment / Medication            | <ul style="list-style-type: none"> <li>• Ensure microscope functioning well.</li> <li>• Prepare complete &amp; sterile Pterygium set.</li> <li>• Prepare supplementary instruments.</li> <li>• Prepare solutions.</li> <li>• Prepare disposable item.</li> <li>• Verify correct medication.</li> <li>• Verify medication expiry date.</li> </ul> |  | <ul style="list-style-type: none"> <li>• Microscope</li> <li>• Dressing Set</li> <li>• Pterygium Set.</li> <li><b>*Refer Appendix 3</b></li> <li>• Supplementary instruments               <ol style="list-style-type: none"> <li>i. Diathermy</li> <li>ii. 8.0 vicryl suture</li> <li>iii. Glue if applicable</li> </ol> </li> <li>• Solutions               <ol style="list-style-type: none"> <li>i. Antiseptic – povidone iodine 5%</li> </ol> </li> <li>• Disposable item               <ol style="list-style-type: none"> <li>i. Eye drape</li> <li>ii. Syringe</li> <li>iii. Needle</li> <li>iv. Sterile glove</li> <li>v. Eye pad</li> </ol> </li> <li>• Medication               <ol style="list-style-type: none"> <li>i. Topical Anaesthesia</li> </ol> </li> </ul> |

|                      |  |   |  |
|----------------------|--|---|--|
|                      |  |   | ii. Lignocaine injection 2%<br>iii. Ointment antibiotic<br>• Graft if necessary  |
| Prepare Patient      | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Inform the patient about the procedure.</li> <li>• Position patient in supine on the table</li> <li>• Instil topical anaesthesia.</li> <li>• Clean and drape patient's eye with aseptic technique</li> </ul>   | Malaysian Patient Safety Goal 2.0<br><br><i>Manual Arahan Kerja</i> | <ul style="list-style-type: none"> <li>• Patient record</li> <li>• Antiseptic</li> <li>• Topical anaesthesia</li> <li>• Eye Drape</li> </ul>   |
| Assist the Procedure | <ul style="list-style-type: none"> <li>• Hand washing, gowning, and gloving using aseptic technique and proper sterile attire.</li> <li>• Assist doctor and wait for the next instructions.</li> </ul> <p><u>Steps (Perform by doctor)</u></p> <ol style="list-style-type: none"> <li>1) Subconjunctiva injection of LA</li> <li>2) Cut the neck of the pterygium and dissect to separate it from the conjunctiva.</li> <li>3) Scrape the pterygium head from the corneal site and excise for pterygia.</li> </ol> |   | <ul style="list-style-type: none"> <li>• OT gown</li> <li>• Sterile glove</li> </ul> <p><u>Steps (Hand over by AMO)</u></p> <ol style="list-style-type: none"> <li>1) 2ml lignocaine in 3ml syringe attach with 26g needle.</li> <li>2) Conjunctiva scissor, conjunctival forceps</li> <li>3) Tooke knife/blade</li> </ol> |

|  |   |   |  |
|--|---|---|--|
|  | <p>4) Measure and mark the size of the conjunctiva for grafting needs.</p> <p>5) Subconjunctiva LA injection at conjunctiva graft site</p> <p>6) Excise conjunctiva graft</p> <p>7) Suture conjunctiva graft</p> <p>8) Examine for extraocular movement.</p> <p>9) Antibiotics</p> <p>10) Pad operated eye</p>  |   | <p>4) Callipers and marker</p> <p>5) Lignocaine in 3ml syringe attach with 26g needle.</p> <p>6) Conjunctiva forceps and conjunctiva scissor</p> <p>7) Needle holder and suture tire with 8.0 vicryl (absorbable suture)</p> <p>8) –</p> <p>9) Ointment antibiotics</p> <p>10) Eye pad/ micropore tape</p> |
| Cleaning And Sterilization of Microsurgery Instruments | Refer to Cleaning and sterilization of microsurgery instruments guideline.  | Policies and Procedure on Infection Prevention and control, MOH, 2018 (3 <sup>rd</sup> edition) | Refer to Cleaning and sterilization of microsurgery instruments guideline.   |
| Health Education                                       | <ul style="list-style-type: none"> <li>• Post-operative care                             <ol style="list-style-type: none"> <li>i. Do not rub the operated eye.</li> <li>ii. Open the eye pad after 4 hours and administer the medication.</li> </ol> </li> <li>• Observe for symptom of any complications.</li> <li>• Advise patients to go to the eye clinic during office hours and emergency</li> </ul> |   |  |

|               |   |                               |   |
|---------------|---|-------------------------------|---|
|               | <p>department immediately after office hours if any complication occurs.</p> <ul style="list-style-type: none"> <li>• Emphasize on follow up compliance.</li> </ul> |                               |   |
| Documentation | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>  | Safe Surgery Safe Life (SSSL) | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> <li>• SSSL Form</li> </ul> |

## REFERENCE

Wikimedia Foundation. (2023, October 25). *Pterygium (eye)*. Wikipedia.  
[https://en.wikipedia.org/wiki/Pterygium\\_\(eye\)](https://en.wikipedia.org/wiki/Pterygium_(eye))

*Pterygium*. EyeWiki. (2022, November 1). <https://eyewiki.aao.org/Pterygium>

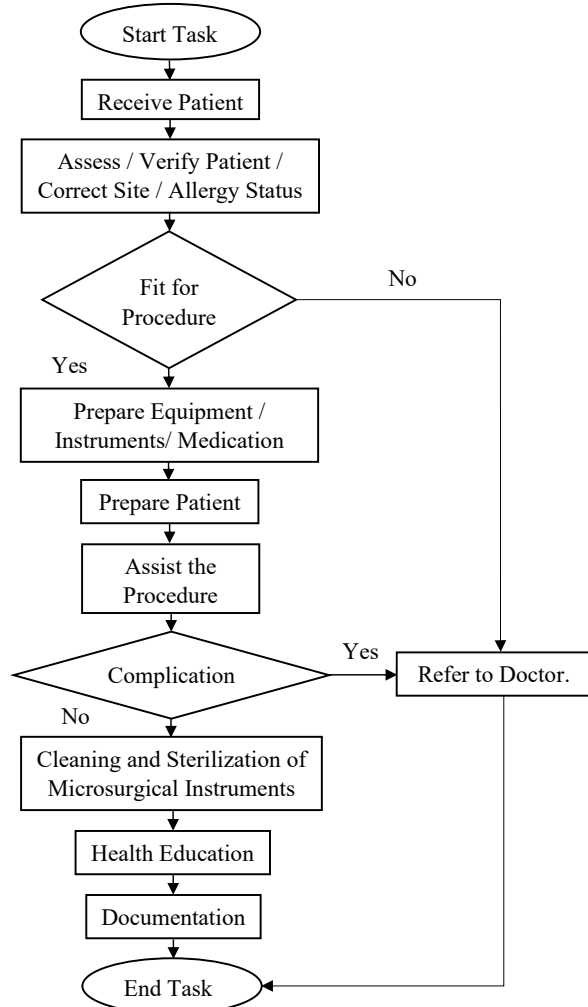
Dottie. (2019, October 4). *Pterygium*. PORTAL MyHEALTH.  
<http://www.myhealth.gov.my/en/pterygium/>

Salmon, J. F., & Kanski, J. J. (2020). *Kanski's clinical ophthalmology: a systematic approach*. Elsevier.

## PHACOEMULSIFICATION WITH INTRAOCULAR LENS (IOL) IMPLANTATION

|                           |  |
|---------------------------|--|
| <b>INTRODUCTION</b>       | Phacoemulsification is a cataract surgery procedure in which the nucleus of the cataractous lens is removed using ultrasound handpiece and aspirated from the eye.   |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be assisted by a privileged Assistant Medical Officer (AMO).</li> <li>• All patient requiring cataract surgery and suitable for this procedure.</li> </ul> |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• To restore vision.</li> <li>• Smaller incision and achieved faster recovery.</li> <li>• To reduce the risk of complication.</li> </ul>  |

### WORKFLOW



| WORK INSTRUCTION  |  |   |  |
|---|--|---|--|
| ACTIVITY  | WORK PROCESS   | STANDARD  | REQUIREMENT  |
| Receive Patient   | <ul style="list-style-type: none"> <li>• Register patient particulars in record book / OT book.</li> </ul>   | Malaysian Patient Safety Goal 2.0 (MPSG)  | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Record book / census</li> </ul>  |
| Assess / Verify Patient / Correct Site / Allergy Status | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Verify correct site.</li> <li>• Verify correct procedure.</li> <li>• Verify allergy status.</li> <li>• Verify correct implant.</li> <li>• Verify implant expiry date.</li> <li>• Ensure written consent has been taken.</li> </ul> | <p><i>Manual Arahan Kerja</i></p> <p>Safe Surgery Safe Life (SSSL)</p> <p>Malaysian Patient Safety Goal 2.0</p> | <ul style="list-style-type: none"> <li>• Safe Surgery Safe Life (SSSL) Form</li> <li>• Operation theatre (OT) list</li> <li>• Signed consent form.</li> </ul>  |
| Prepare Instruments / Equipment / Medication / Implant  | <ul style="list-style-type: none"> <li>• Ensure Phaco machine and surgical microscope functioning perfectly.</li> <li>• Prepare complete &amp; sterile Cataract set.</li> <li>• Prepare supplementary instruments.</li> <li>• Prepare solutions.</li> <li>• Prepare disposable item.</li> </ul>                |   | <ul style="list-style-type: none"> <li>• Surgical microscope.</li> <li>• Phaco machine.</li> <li>• Dressing Set</li> <li>• Cataract set.</li> <li><b>*Refer Appendix 4</b></li> <li>• Irrigation aspiration probe (I/A)</li> <li>• Supplementary instruments <ul style="list-style-type: none"> <li>i. IOL injector</li> </ul> </li> <li>• Solutions <ul style="list-style-type: none"> <li>i. Antiseptic solution</li> <li>ii. Balance salt solution (BSS)</li> </ul> </li> <li>• Disposable item <ul style="list-style-type: none"> <li>i. Eye drape</li> <li>ii. Keratome</li> <li>iii. Ophthalmic</li> </ul> </li> </ul> |

|                 |   |  |  |
|-----------------|---|--|--|
|                 | <ul style="list-style-type: none"> <li>• Verify correct medication.</li> <li>• Verify medication expiry date.</li> <li>• Verify correct implant.</li> <li>• Verify implant expiry date.</li> </ul> <p><u>Prepare intracameral antibiotics.</u></p> <p>1) Dilute cefuroxime powder 750mg with 7.5ml (750ml) normal saline or water for injection.</p> <p>2) Syringe out 1ml and dilute it with 9ml Normal Saline.</p> <p>3) Syringe out 1ml (dose 0.1ml/1mg)</p> <p>Prepare intracameral anaesthesia.</p> <p>1) Withdraw 0.1ml lignocaine 2% in 1cc syringe (if indicated)</p> |  | <p>viscosurgical device (OVD)</p> <ul style="list-style-type: none"> <li>• Medication <ul style="list-style-type: none"> <li>i. Topical Anaesthesia</li> <li>ii. Carbachol 0.1mg/ml</li> <li>iii. Topical Steroid</li> <li>iv. Topical Antibiotics</li> </ul> </li> <li>• Intra ocular lens (IOL)</li> </ul> |
| Prepare Patient | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Confirm adequate dilation.</li> <li>• Inform the patient about the procedure.</li> <li>• Position patient in supine on the table</li> <li>• Instil topical anaesthesia.</li> </ul>  | <p>Malaysian Patient Safety Goal 2.0</p> <p><i>Manual Arahan Kerja</i></p> | <ul style="list-style-type: none"> <li>• Patient record</li> <li>• Topical anaesthesia</li> <li>• Dilating eye drop</li> <li>• Eye Drape</li> </ul>  |

|                      |   |  |   |
|----------------------|---|--|---|
|                      | <ul style="list-style-type: none"> <li>• Clean and drape patient's eye with aseptic technique</li> </ul>  |  |   |
| Assist the Procedure | <ul style="list-style-type: none"> <li>• Hand washing, gowning, and gloving using aseptic technique and proper sterile attire.</li> <li>• Assist doctor and wait for the next instructions.</li> </ul> <p><u>Steps (Perform by doctor)</u></p> <ol style="list-style-type: none"> <li>1) Corneal incision.</li> <li>2) Staining of anterior capsule.</li> <li>3) Flushing trypan blue</li> <li>4) Viscoelastic injection into anterior chamber</li> <li>5) For small pupil, intracameral adrenaline and / or iris retractor</li> <li>6) Continuous curvilinear capsulotomy (CCC)</li> <li>7) Hydro manoeuvres</li> <li>8) Nucleus disassembly</li> <li>9) Cortical clean up</li> <li>10) Filling of capsular bag with viscoelastic</li> <li>11) Implantation IOL</li> <li>12) Positioning of IOL</li> </ol> |  | <ul style="list-style-type: none"> <li>• OT gown</li> <li>• Sterile glove</li> </ul> <p><u>Steps (Hand over by AMO)</u></p> <ol style="list-style-type: none"> <li>1) Keratome blade</li> <li>2) Trypan blue</li> <li>3) BSS in 3ml syringe attached with Rycroft cannula.</li> <li>4) Viscoelastic</li> <li>5) Diluted adrenaline / iris retractor &amp; 15-degree blade.</li> <li>6) Utrata forceps</li> <li>7) BSS in 3ml syringe attached with Rycroft cannula.</li> <li>8) Phaco probe handpiece</li> <li>9) Irrigation aspiration probe (I/A)</li> <li>10) Viscoelastic</li> <li>11) Intraocular lens</li> <li>12) IOL manipulator</li> </ol> |

|  |  |   |   |
|--|--|---|---|
|  | <p>13) Removal of viscoelastic</p> <p>14) Closure of the incision. Wound hydration.</p> <p>15) Injection intracameral antibiotics.</p> <p>16) Cover the eye</p>  |   | <p>13) Irrigation aspiration probe (I/A)</p> <p>14) BSS in 3ml syringe attached with Rycroft cannula.</p> <p>15) Diluted cefuroxime.</p> <p>16) Eye shield/pad/micropore tape</p> |
| Cleaning And Sterilization of Microsurgery Instruments | Refer to Cleaning and sterilization of microsurgery instruments guideline.   | Policies and Procedure on Infection Prevention and control, MOH, 2018 (3 <sup>rd</sup> edition) | Refer to Cleaning and sterilization of microsurgery instruments guideline.  |
| Health Education                                       | <ul style="list-style-type: none"> <li>• Post-operative care             <ol style="list-style-type: none"> <li>i. Do not rub your eye.</li> <li>ii. Do not lift heavy weights.</li> <li>iii. Do not bend over.</li> </ol> </li> <li>• Observe for symptom of any complications.</li> <li>• Advise patients to go to the eye clinic during office hours and emergency department immediately after office hours if any complication occurs.</li> <li>• Emphasize on follow up compliance.</li> </ul> |   |   |
| Documentation  | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>   | Safe Surgery Safe Life (SSSL)   | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> <li>• SSSL Form</li> </ul>   |

**REFERENCE**

Wikimedia Foundation. (2024, January 1). *Phacoemulsification*. Wikipedia.  
<https://en.wikipedia.org/wiki/Phacoemulsification>

Troy Bedinghaus, O. (2023, March 22). *Phacoemulsification Cataract surgery*. Verywell Health. <https://www.verywellhealth.com/phacoemulsification-3422159>

Manolette R Roque, M. (2023, February 1). *Phacoemulsification with Intraocular Lens (IOL) implantation*. Background, Indications, Contraindications.  
<https://emedicine.medscape.com/article/1844198-overview>

**EXTRA CAPSULAR CATARACT EXTRACTION (ECCE)**

|                           |  |
|---------------------------|--|
| <b>INTRODUCTION</b>       | Removed manually while leaving the posterior capsule intact to allow implantation of an intraocular lens (IOL).  |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be assisted by a privileged Assistant Medical Officer (AMO).</li> <li>• All patient requiring cataract surgery and suitable for this procedure.</li> </ul>   |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• Restore vision by removing of cataract and implantation of IOL</li> </ul>   |
| <b>WORKFLOW</b>           | <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive Patient]     Receive --&gt; Assess[Assess / Verify Patient /<br/>Correct Site / Allergy Status]     Assess --&gt; Fit{Fit for<br/>Procedure}     Fit -- No --&gt; Refer[Refer to Doctor]     Fit -- Yes --&gt; Equip[Prepare Equipment /<br/>Instruments/ Medication]     Equip --&gt; Prep[Prepare Patient]     Prep --&gt; Assist[Assist the<br/>Procedure]     Assist --&gt; Comp{Complication}     Comp -- Yes --&gt; Refer     Comp -- No --&gt; Clean[Cleaning and Sterilization of<br/>Microsurgical Instruments]     Clean --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End   </pre> |

| WORK INSTRUCTION  |  |   |  |
|---|--|---|--|
| ACTIVITY  | WORK PROCESS   | STANDARD  | REQUIREMENT  |
| Receive Patient   | Register patient particulars in record book / OT book.   | Malaysian Patient Safety Goal 2.0   | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Record book / census</li> </ul>  |
| Assess / Verify Patient / Correct Site / Allergy Status | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Verify correct site.</li> <li>• Verify correct procedure.</li> <li>• Verify allergy status</li> <li>• Ensure written consent has been taken.</li> </ul>                | <p><i>Manual Arahan Kerja</i></p> <p>Safe Surgery Safe Life (SSSL)</p> <p>Malaysian Patient Safety Goal 2.0</p> | <ul style="list-style-type: none"> <li>• Safe Surgery Safe Life (SSSL) Form</li> <li>• Operation theatre (OT) list</li> <li>• Signed consent form</li> </ul>   |
| Prepare Instruments / Equipment / Medication / Implant  | <ul style="list-style-type: none"> <li>• Check functionality Machine</li> <li>• Prepare complete and sterile ECCE set.</li> <li>• Prepare supplementary instruments.</li> <li>• Prepare disposable items.</li> <li>• Prepare solutions.</li> </ul> | <p><i>Manual Arahan Kerja</i></p>   | <ul style="list-style-type: none"> <li>• Operating Microscope</li> <li>• Diathermy machine</li> <li>• ECCE Set<br/><b>*Refer Appendix 5</b></li> <li>• Supplementary instruments               <ol style="list-style-type: none"> <li>Eye drape</li> <li>Keratome knife 2.75mm</li> <li>Injector Intra Ocular Lens (IOL).</li> </ol> </li> <li>• Disposable items               <ol style="list-style-type: none"> <li>Intravenous drip set</li> <li>Syringes – 3ml x 2, 5ml x 1, 1ml x1 and needle (23Gx1, 26Gx1)</li> <li>10/0 Nylon suture</li> <li>Drape - adhesive disposable half body preferred</li> <li>Eye pad</li> <li>Eye Shield</li> </ol> </li> </ul> |

|                        |   |  |  |
|------------------------|---|--|--|
|                        | <ul style="list-style-type: none"> <li>• Verify correct medication.</li> <li>• Check medication expiry date.</li> <br/> <li>• Verify correct implant.</li> <li>• Check implant expiry date.</li> </ul> <p><u>Medication Preparation Step</u></p> <ul style="list-style-type: none"> <li>• Withdraw both Lignocaine HCL 2% Bupivacaine HCL with ratio 1:1</li> <li>• Prepare Balance Salt Solution (BSS) with Adrenaline 1:1,000 dilutions (0.5ml Adrenaline 0.36 % / 500ml BSS)</li> <li>• Antibiotic injection<br/>Withdraw both Gentamicin 20mg Dexamethasone 2mg with ratio 1:1</li> </ul> |  | <ul style="list-style-type: none"> <li>vii. Adhesive tape</li> <li>• Solution             <ul style="list-style-type: none"> <li>i. Antiseptic lotion</li> <li>ii. Normal saline</li> </ul> </li> <li>iii. Balanced Salt Solution (BSS)</li> <li>iv. Trypan blue (optional)</li> <li>v. Ophthalmic Viscosurgical Device (OVD)</li> <li>• Medication             <ul style="list-style-type: none"> <li>i. Topical Anaesthesia</li> <li>ii. Lignocaine HCL 2%</li> <li>iii. Bupivacaine HCL 0.5%</li> <li>iv. Dilating drops.</li> <li>v. Topical Steroid</li> <li>vi. Topical Antibiotics</li> </ul> </li> <li>vii. Intracameral carbachol</li> <li>• Implant             <ul style="list-style-type: none"> <li>i. Intra Ocular Lens (IOL)</li> </ul> </li> </ul> |
| <p>Prepare Patient</p> | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> </ul>   | <p>Malaysian Patient Safety Goal 2.0</p> | <ul style="list-style-type: none"> <li>• Patient record</li> <li>• Dilating eye drop</li> </ul>  |

|                      |  |                            |  |
|----------------------|--|----------------------------|--|
|                      | <ul style="list-style-type: none"> <li>• Confirm adequate dilatation.</li> <li>• Inform the patient about the procedure.</li> <li>• Position patient in supine on the table</li> <li>• Clean and drape patient's eye with clean / aseptic technique</li> </ul>   | <i>Manual Arahan Kerja</i> | <ul style="list-style-type: none"> <li>• Antiseptic</li> <li>• Eye Drape</li> </ul>  |
| Assist the Procedure | <ul style="list-style-type: none"> <li>• Hand washing, gowning and gloving using aseptic technique and proper sterile attire.</li> <li>• Assist doctor and wait for the next instructions</li> </ul> <p><u>Steps (Perform by doctor)</u></p> <ol style="list-style-type: none"> <li>1) Clean the patient's eye.</li> <li>2) Drape the patient</li> <li>3) Apply eye speculum.</li> <li>4) Localised Conjunctival incision.</li> <li>5) Sub-tenon injection.</li> <li>6) Conjunctival Peritomy.</li> <li>7) Secure Bleeding</li> <li>8) Limbal / corneal incision.</li> <li>9) Injection of OVD.</li> <li>10) Bend Needle for Capsulotomy.</li> <li>11) Capsulotomy.</li> <li>12) Hydrodissection</li> <li>13) Express nucleus of the lens</li> </ol> |                            | <ul style="list-style-type: none"> <li>• OT gown</li> <li>• Sterile glove</li> </ul> <p><u>Steps (Hand over by AMO)</u></p> <ol style="list-style-type: none"> <li>1) Antiseptic solution</li> <li>2) Eye Drape</li> <li>3) Eye Speculum</li> <li>4) Injection Lignocaine 2%</li> <li>5) Injection Marcaine 0.5%</li> <li>6) Diathermy Forceps</li> <li>7) Cotton Bud</li> <li>8) 15 Degree knife</li> <li>9) OVD</li> <li>10) Syringes 1ml with needle 26G</li> <li>11) Utrata Capsulorhexis Forceps</li> <li>12) BSS in 3ml syringe</li> <li>13) Vectis and Squint Hook</li> </ol> |

|  |  |   |   |
|--|--|---|---|
|  | <p>14) Preplaced corneal/limbal suture</p> <p>15) Irrigation and aspiration of cortex</p> <p>16) Injection of OVD</p> <p>17) Insertion of IOL</p> <p>18) Irrigation and aspiration of OVD</p> <p>19) Cornea/limbal wound suture</p> <p>20) Reform of anterior chamber</p> <p>21) Intracameral carbachol intraocular solution</p> <p>22) Subconjunctival antibiotic injection</p> <p>23) Instilled steroid drops and antibiotic drops into the operated eye at the end of surgery</p> <p>24) Apply eye pad and eye shield on the operated eye</p> |   | <p>14) Suture Tying forceps and 10/0 Nylon Suture</p> <p>15) Simcoe Cannula</p> <p>16) OVD</p> <p>17) IOL</p> <p>18) Simcoe irrigating-aspirating cannula</p> <p>19) Suture Tying forceps and 10/0 Nylon Suture</p> <p>20) BSS in 3ml syringe</p> <p>21) Intracameral carbachol</p> <p>22) Antibiotic</p> <p>23) Eyedrops</p> <p>24) Eye pad and Eye shield</p> |
| Cleaning And Sterilization of Microsurgery Instruments | Refer to Cleaning and sterilization of microsurgery instruments guideline.   | Policies and Procedure on Infection Prevention and control, MOH, 2018 (3 <sup>rd</sup> edition) | Refer to Cleaning and sterilization of microsurgery instruments guideline.  |
| Health Education                                       | <ul style="list-style-type: none"> <li>Advised patient to go to eye clinic during office hours or emergency department immediately after office hour if any complication occurs.</li> </ul>  | <i>Manual Arahan Kerja</i>  |   |

|               |   |                               |   |
|---------------|---|-------------------------------|---|
|               | <ul style="list-style-type: none"> <li>• Compliance to medication and follow up appointment.</li> </ul> |                               |   |
| Documentation | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>                                    | Safe Surgery Safe Life (SSSL) | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> <li>• SSSL Form</li> </ul> |

## REFERENCE

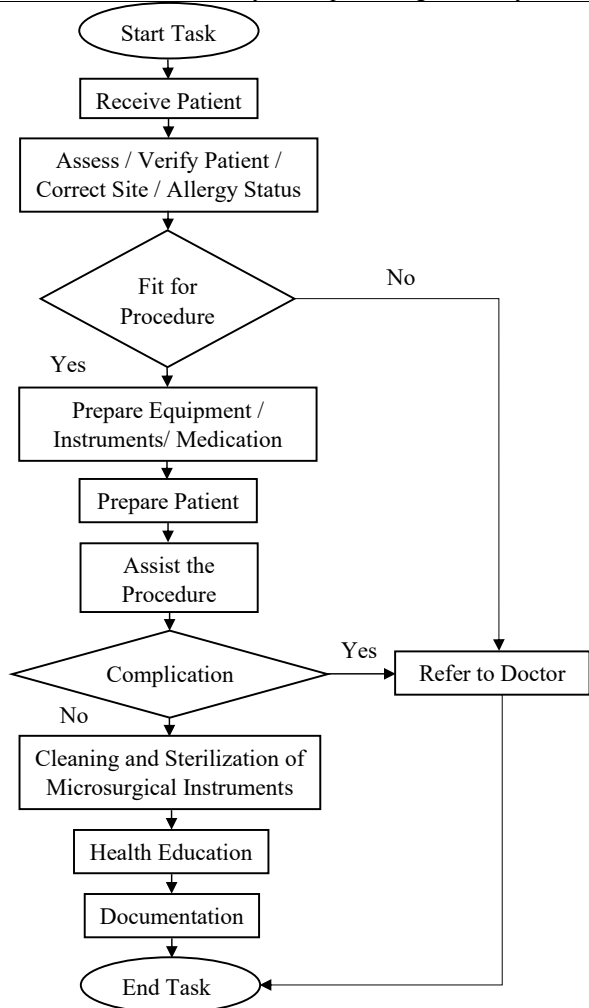
Lee, M.-Y., Goh, P.-P., Salowi, M. A., Adnan, T. H., & Ismail, M. (2014). The Malaysian Cataract Surgery Registry. *Asia-Pacific Journal of Ophthalmology*, 3(6), 343–347. <https://doi.org/10.1097/apo.0000000000000030>

Barriga, A. (2023) *Extracapsular Cataract Extraction (ECCE)*, *InSight Vision Center*. Available at: <https://www.insightvisioncenter.com/extracapsular-cataract-extraction-ecce/> (Accessed: 24 January 2024).

Thevi, T. (2014). *Outcome of phacoemulsification and extracapsular cataract extraction: A study in a district hospital in Malaysia*. PubMed Central (PMC). <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4391517/>

**INTRA CAPSULAR CATARACT EXTRACTION (ICCE)**

|                           |  |
|---------------------------|--|
| <b>INTRODUCTION</b>       | Intracapsular cataract extraction (ICCE) is a procedure involves the removal of the crystalline lens with the intact capsule. The procedure has a relatively high rate of complications due to the large incision wound and vitreous loss.               |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be assisted by a privileged Assistant Medical Officer (AMO).</li> <li>• Patient with unstable crystalline lens which not suitable for conventional cataract surgery method.</li> </ul>       |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• To remove the significant subluxated of crystalline lens.</li> <li>• To remove the significant dislocated crystalline lens.</li> <li>• To remove severe zonular laxity and capsular bag instability.</li> </ul> |

**WORKFLOW**

| WORK INSTRUCTION  |   |   |  |
|---|---|---|--|
| ACTIVITY  | WORK PROCESS  | STANDARD  | REQUIREMENT  |
| Receive Patient   | <ul style="list-style-type: none"> <li>Register patient particulars in patients record book.</li> </ul>   | Malaysian Patient Safety Goal 2.0 (MPSG)  | <ul style="list-style-type: none"> <li>Patient appointment card / record</li> <li>Record book / census</li> <li>BHT patient</li> </ul>   |
| Assess / Verify Patient / Correct Site / Allergy Status | <ul style="list-style-type: none"> <li>Verify correct patient.</li> <li>Verify correct site.</li> <li>Verify correct procedure.</li> <li>Verify allergy status.</li> <li>Ensure written consent has been taken.</li> <li>Verify correct IOL implant.</li> </ul>   | <p><i>Manual Arahan Kerja</i></p> <p>Safe Surgery Safe Life (SSSL)</p> <p>Malaysian Patient Safety Goal 2.0</p> | <ul style="list-style-type: none"> <li>Safe Surgery Safe Life (SSSL) Form</li> <li>Operation theatre (OT) list</li> <li>Signed consent form.</li> <li>Intra ocular lens</li> </ul>   |
| Prepare Instruments / Equipment / Medication / Implant  | <ul style="list-style-type: none"> <li>Ensure microscope works perfectly.</li> <li>Prepare vitrectomy machine.</li> <li>Prepare cryo machine.</li> <li>Prepare complete &amp; sterile Intra capsular cataract extraction (ICCE) set.</li> <li>Prepare supplementary instruments.</li> <li>Prepare solutions.</li> <li>Prepare disposable item.</li> </ul> |   | <ul style="list-style-type: none"> <li>Surgical Microscope.</li> <li>Anterior vitrectomy machine.</li> <li>Cryo machine</li> <li>Dressing Set</li> <li>Intra capsular cataract extraction (ICCE) Set.</li> <li><b>*Refer Appendix 6</b></li> <li>Supplementary instruments             <ol style="list-style-type: none"> <li>Diathermy</li> <li>Simcoe canula</li> <li>Anterior vitrectomy probe</li> <li>Cryo probe</li> </ol> </li> <li>Solutions             <ol style="list-style-type: none"> <li>Antiseptic solution</li> </ol> </li> <li>Disposable item             <ol style="list-style-type: none"> <li>Eye drape</li> <li>Eye sponge</li> </ol> </li> </ul> |

|                      |  |  |   |
|----------------------|--|--|---|
|                      | <ul style="list-style-type: none"> <li>• Verify correct medication.</li> <li>• Check medication expiry date.</li> </ul> <p><u>Medication</u><br/><u>Preparation Step</u></p> <p>Dexamethasone 0.5ml<br/>Gentamycin 0.5ml<br/>In 3ml syringe</p> <ul style="list-style-type: none"> <li>• Check implant expiry date.</li> </ul> |  | <ul style="list-style-type: none"> <li>iii. Viscoelastic agent</li> <li>iv. 10.0 Nylon</li> <li>v. 15-degree blade/keratome</li> <li>vi. Eye pad</li> <li>• Medication             <ul style="list-style-type: none"> <li>i. Sub-tenon injection of local anaesthesia</li> <li>ii. Topical anaesthesia</li> <li>iii. Topical Steroid</li> <li>iv. Topical Antibiotics</li> <li>v. Miostat</li> <li>vi. Triamcinolone injection</li> </ul> </li> <li>• Implant             <ul style="list-style-type: none"> <li>i. Intraocular lens</li> </ul> </li> </ul> |
| Prepare Patient      | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Confirm adequate dilation.</li> <li>• Inform the patient about the procedure.</li> <li>• Position patient in supine on the table</li> <li>• Clean and drape patient's eye with aseptic technique</li> </ul>  | <p>Malaysian Patient Safety Goal 2.0</p> <p><i>Manual Arahan Kerja</i></p> | <ul style="list-style-type: none"> <li>• Patient record</li> <li>• Topical anaesthesia</li> <li>• Dilating eye drop</li> <li>• Antiseptic</li> <li>• Eye Drape</li> </ul>   |
| Assist the Procedure | <ul style="list-style-type: none"> <li>• Hand washing, gowning, and gloving using aseptic technique and proper sterile attire.</li> <li>• Assist doctor and wait for the next instructions.</li> </ul> <p><u>Surgery Steps</u><br/><u>(Performed by doctor)</u></p> <p>1) Sub-tenon injection of LA</p>                        |  | <ul style="list-style-type: none"> <li>• OT gown</li> <li>• Sterile glove</li> </ul> <p><u>Steps (Hand over by AMO)</u></p> <p>1) Conjunctival forceps/ conjunctiva scissors / sub-</p>   |

|  |   |  |  |
|--|---|--|--|
|  | <p>2) Conjunctiva peritomy.</p> <p>3) Tenon clearance</p> <p>4) Cauterize bleeders.</p> <p>5) Limbal wound making.</p> <p>6) Viscoelastic injection into anterior chamber.</p> <p>7) Enlarge limbal wound.</p> <p>8) Delivery of lens</p> <p>9) Suture the wound.</p> <p>10) Anterior vitrectomy (with / without triamcinolone stain of vitreous)</p> <p>11) Constrict the pupil.</p> <p>12) Filling anterior chamber with viscoelastic</p> <p>13) Implantation Anterior chamber IOL</p> <p>14) Manipulate IOL</p> <p>15) Removal of viscoelastic</p> <p>16) Do peripheral iridectomy (PI)</p> <p>17) Check PI pattern or not.</p> <p>18) Reform anterior chamber</p> |  | <p>tenon needle with syringe</p> <p>2) Conjunctiva scissor and conjunctiva forceps</p> <p>3) Tooke knife</p> <p>4) Diathermy</p> <p>5) 15-degree keratome</p> <p>6) Viscoelastic</p> <p>7) Corneal scissors</p> <p>8) Vectis and squint hook</p> <p>9) Needle holder, suture tire 10.0 Nylon</p> <p>10) Vitrectomy probe</p> <p>11) Miostat 0.3ml in 3ml syringe</p> <p>12) Viscoelastic</p> <p>13) Intraocular lens and glider</p> <p>14) Kuglen</p> <p>15) Simcoe cannula</p> <p>16) Colibri forceps and Vanas scissor</p> <p>17) BSS in 3 ml syringe attach with Rycroft.</p> <p>18) BSS in 3ml syringe attached with Rycroft cannula.</p> <p>19) Suture 10.0 Nylon, needle</p> |
|--|---|--|--|

|  |   |   |  |
|--|---|---|--|
|  | <p>19) Closure of wound. Reposition conjunctiva.</p> <p>20) Subconjunctiva antibiotic injection</p> <p>21) Cover the eye</p>  |   | <p>holder and suture tire</p> <p>20) Steroid injection</p> <p>21) Eye shield / pad, micropore tape</p> |
| Cleaning And Sterilization of Microsurgery Instruments | Refer to Cleaning and sterilization of microsurgery instruments guideline.  | Policies and Procedure on Infection Prevention and control, MOH, 2018 (3 <sup>rd</sup> edition) | Refer to Cleaning and sterilization of microsurgery instruments guideline.                             |
| Health Education                                       | <ul style="list-style-type: none"> <li>• Post-operative care                             <ol style="list-style-type: none"> <li>i. Do not rub your eyes.</li> <li>ii. Do not lift heavy weights.</li> <li>iii. Do not bend over.</li> <li>iv. Compliance to eye drops</li> </ol> </li> <li>• Advice to observe for any symptoms of complications.</li> <li>• Advise patients to go to eye clinic during office hour and emergency department immediately after office hour if any complication occurs.</li> <li>• Conditional prayers (<i>Solat bersyarat</i>)</li> <li>• Emphasize on follow up compliance.</li> </ul> |   |  |
| Documentation  | Record procedure  | Safe Surgery Safe Life (SSSL)   | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> <li>• SSSL Form</li> </ul>      |

**REFERENCE**

*A textbook of clinical ophthalmology: A practical guide...* (PDF). PDF Room. (2010, February 10). <https://pdfroom.com/books/a-textbook-of-clinical-ophthalmology-a-practical-guide-to-disorders-of-the-eyes-and-their-management/kNpgplQegjr>

Kreutzer, T. C. (2023, May 18). *Extracapsular and Intracapsular Cataract extraction*. SpringerLink. [https://link.springer.com/chapter/10.1007/978-3-031-05394-8\\_56](https://link.springer.com/chapter/10.1007/978-3-031-05394-8_56)

Slideshare. (2019, March 31). *Intracapsular Cataract extraction*. PPT. <https://www.slideshare.net/SeenaJose2/intracapsular-cataract-extraction>

| <b>EYELID SURGERY</b>     |   |
|---------------------------|---|
| <b>INTRODUCTION</b>       | Eyelid surgery is a surgical procedure to improve the appearance of eyelids such as Blepharoplasty, Entropion Correction, Anterior Lamellar Repositioning, Ptosis Correction and Excisional biopsy.   |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be assisted by a privileged Assistant Medical Officer (AMO).</li> <li>• All patient with eyelid condition that require eyelid surgery.</li> </ul>   |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• To improve the vision by restoring anatomic structure and physiologic function of eyelids.</li> </ul>  |
| <b>WORKFLOW</b>           | <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive Patient]     Receive --&gt; Assess[Assess / Verify Patient /<br/>Correct Site / Allergy Status]     Assess --&gt; Fit{Fit for<br/>Procedure}     Fit -- No --&gt; Refer[Refer to Doctor]     Fit -- Yes --&gt; PrepareInst[Prepare Instruments /<br/>Equipment / Medication]     PrepareInst --&gt; PreparePat[Prepare Patient]     PreparePat --&gt; Assist[Assist the<br/>Procedure]     Assist --&gt; Comp{Complication}     Comp -- Yes --&gt; Refer     Comp -- No --&gt; Clean[Cleaning and Sterilization of<br/>Microsurgical Instruments]     Clean --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End           </pre> <p>The workflow diagram for eyelid surgery begins with 'Start Task', followed by 'Receive Patient'. The next step is 'Assess / Verify Patient / Correct Site / Allergy Status', leading to a decision diamond 'Fit for Procedure'. If 'No', the patient is referred to a doctor. If 'Yes', the process continues to 'Prepare Instruments / Equipment / Medication', then 'Prepare Patient', and 'Assist the Procedure'. Another decision diamond 'Complication' follows; if 'Yes', the patient is referred to a doctor. If 'No', the workflow proceeds to 'Cleaning and Sterilization of Microsurgical Instruments', then 'Health Education', 'Documentation', and finally 'End Task'. A 'Refer to Doctor' box also receives input from the 'Fit for Procedure' 'No' path and the 'Complication' 'Yes' path, with an arrow pointing to the 'End Task' oval.</p> |

| WORK INSTRUCTION  |  |   |   |
|---|--|---|---|
| ACTIVITY  | WORK PROCESS   | STANDARD  | REQUIREMENT   |
| Receive Patient   | <ul style="list-style-type: none"> <li>• Register patient particulars in patient's record book</li> </ul>  | Malaysian Patient Safety Goal 2.0   | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Record book / census</li> </ul>   |
| Assess / Verify Patient / Correct Site / Allergy Status | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Verify correct site.</li> <li>• Verify correct procedure.</li> <li>• Verify allergy status</li> <li>• Ensure written consent has been taken.</li> </ul>  | <p><i>Manual Arahan Kerja</i></p> <p>Safe Surgery Safe Life (SSSL)</p> <p>Malaysian Patient Safety Goal 2.0</p> | <ul style="list-style-type: none"> <li>• Safe Surgery Safe Life (SSSL) Form</li> <li>• Operation theatre (OT) list</li> <li>• Signed consent form</li> </ul>  |
| Prepare Instruments / Equipment / Medication            | <ul style="list-style-type: none"> <li>• Make sure bipolar cautery machine works perfectly.</li> <li>• Prepare complete &amp; sterile Lid set.</li> <li>• Prepare supplementary instruments</li> <li>• Prepare solutions</li> <li>• Prepare disposable items</li> <li>• Verify correct medication.</li> <li>• Check medication expiry date.</li> </ul> |   | <ul style="list-style-type: none"> <li>• Bipolar cautery machine</li> <li>• Lid Set</li> <li>• <b>*Refer appendix 7</b></li> <li>• Supplementary instruments             <ol style="list-style-type: none"> <li>i. Sterile ruler</li> <li>ii. Sterile marker</li> <li>iii. Cautery cable</li> <li>iv. Cautery forcep</li> </ol> </li> <li>• Solutions             <ol style="list-style-type: none"> <li>i. Antiseptic</li> <li>ii. Sterile water</li> <li>iii. Formaldehyde</li> </ol> </li> <li>• Disposable items             <ol style="list-style-type: none"> <li>i. Eye drape</li> <li>ii. Gauze</li> <li>iii. Cotton bud</li> <li>iv. Dressing set</li> <li>v. 6-0 non-absorbable suture</li> <li>vi. 6-0 ¼ or 6-0 ⅜ absorbable suture</li> </ol> </li> <li>• Medications             <ol style="list-style-type: none"> <li>i. Bupivacaine &amp; Adrenaline injection</li> </ol> </li> </ul> |

|                      |   |  |  |
|----------------------|---|--|--|
|                      | <p><u>Medication</u><br/><u>Preparation Step</u><br/>1. Local anaesthesia<br/>Marcaine:<br/>Adrenaline 1 in<br/>200,000</p> <ul style="list-style-type: none"> <li>• Verify correct implant.</li> <li>• Check implant expiry date.</li> </ul>   |  | <p>ii. Ointment<br/>chloramphenicol</p> <ul style="list-style-type: none"> <li>• Implants (frontalis suspension surgery)</li> </ul>  |
| Prepare Patient      | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Inform the patient about the procedure.</li> <li>• Positioning patient in supine position</li> <li>• Clean and drape patient's eye with aseptic technique</li> </ul>  | <p>Malaysian Patient Safety Goal 2.0</p> <p><i>Manual Arahan Kerja</i></p> |  |
| Assist the Procedure | <ul style="list-style-type: none"> <li>• Hand washing, gowning and gloving using aseptic technique and proper sterile attire.</li> <li>• Assist doctor and wait for the next instructions</li> </ul> <p><u>Steps (Perform by doctor)</u></p> <ol style="list-style-type: none"> <li>1) Skin marking with marker</li> <li>2) Local anaesthetic administering</li> <li>3) Skin incision</li> <li>4) Myocutaneous dissection</li> <li>5) Incision of orbital septum (e.g.; entropion, ptosis)</li> </ol> |  | <ul style="list-style-type: none"> <li>• OT gown</li> <li>• Sterile glove</li> </ul> <p><u>Steps (Hand over by AMO)</u></p> <ol style="list-style-type: none"> <li>1) Skin marker</li> <li>2) Local anaesthesia</li> <li>3) Bard Parker handle with blade size 15</li> <li>4) Tooth forceps and Wescott</li> <li>5) Tooth forceps and Wescott</li> </ol> |

|  |  |   |  |
|--|--|---|--|
|  | <p>6) Identification of lid structure (e.g. inferior retractor for entropion, levator for ptosis, lash root for anterior lamellar repositioning) or lid lesion (e.g., cyst or tumour)</p> <p>7) In frontalis suspension ptosis surgery, stab incisions are made on the lid and eyebrow. A sling material (Fascia Lata, silicone rod or suture material) used to suspend lid to the frontalis muscle.</p> <p>8) Suture the structures (e.g.: tightening of inferior retractor@ levator towards the tarsal plate)</p> <p>9) Skin closure suture</p> <p>10) Apply ointment antibiotic</p> |   | <p>6) Observe</p> <p>7) Implant (frontalis suspension surgery)</p> <p>8) 6.0 ¼ absorbable suture</p> <p>9) 6.0 or 7.0 non-absorbable suture (size as surgeon preferences)</p> <p>10) Ointment antibiotic</p> |
| Cleaning And Sterilization of Microsurgery Instruments | Refer to Cleaning and sterilization of microsurgery instruments guideline.   | Policies and Procedure on Infection Prevention and control, MOH, 2018 (3 <sup>rd</sup> edition) | Refer to Cleaning and sterilization of microsurgery instruments guideline.   |
| Health Education                                       | <ul style="list-style-type: none"> <li>• Post-operative care <ul style="list-style-type: none"> <li>i. Cold compression</li> <li>ii. STO 1 or 2 weeks</li> <li>iii. Apply ointment antibiotic</li> </ul> </li> </ul>   |   |  |

|               |  |                               |   |
|---------------|--|-------------------------------|---|
|               | <ul style="list-style-type: none"> <li>• Observe side effects / complications</li> <li>• Advise patient to go to eye clinic during office hour and emergency department immediately after office hour if any complication occurs</li> <li>• Emphasize on follow up compliance</li> </ul> |                               |   |
| Documentation | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>   | Safe Surgery Safe Life (SSSL) | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> <li>• SSSL Form</li> </ul> |

#### REFERENCE

*Upper Eyelid Anatomy.* (2021, March 17). ThePlasticsFella. <https://www.theplasticsfella.com/upper-eyelid-anatomy/>

Themes, U. F. O. (2020, May 11). *12 Eyelid and Periocular Reconstruction.* Plastic Surgery Key. <https://plasticsurgerykey.com/12-eyelid-and-periocular-reconstruction/>

*Blepharoplasty - Mayo Clinic.* (2018). Mayoclinic.org. <https://www.mayoclinic.org/tests-procedures/blepharoplasty/about/pac-20385174>

Boyd, K. (2022, September 9). *What is ptosis?* American Academy of Ophthalmology. <https://www.aao.org/eye-health/diseases/what-is-ptosis>

Boyd, K. (2023, August 18). *Eyelid surgery.* American Academy of Ophthalmology. <https://www.aao.org/eye-health/treatments/eyelid-surgery>

**SYRINGING & PROBING**

|                           |   |
|---------------------------|---|
| <b>INTRODUCTION</b>       | Probing of nasolacrimal duct involves passing a probe into the lacrimal sac and down through the nasolacrimal duct to open the obstruction at the lower end of the duct. Its only indicated if syringing test suggestive of Nasolacrimal Duct Obstruction (NLDO).   |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be assisted by a privileged Assistant Medical Officer (AMO).</li> <li>• All patients suspected with congenital NLDO.</li> </ul>   |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• To overcome the blockage and ensure the ducts are patent.</li> <li>• To open the valve between nasolacrimal duct and the nose.</li> </ul>  |
| <b>WORKFLOW</b>           | <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive Patient]     Receive --&gt; Assess[Assess / Verify Patient /<br/>Correct Site / Allergy Status]     Assess --&gt; Fit{Fit for<br/>Procedure}     Fit -- No --&gt; Refer[Refer to Doctor]     Fit -- Yes --&gt; PrepareInst[Prepare Instruments /<br/>Equipment / Medication]     PrepareInst --&gt; PreparePat[Prepare Patient]     PreparePat --&gt; Assist[Assist the<br/>Procedure]     Assist --&gt; Comp{Complication}     Comp -- Yes --&gt; Refer     Comp -- No --&gt; Clean[Cleaning and Sterilization of<br/>Microsurgical Instruments]     Clean --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End   </pre> |

**WORK INSTRUCTION**

| <b>ACTIVITY</b>                                      | <b>WORK PROCESS</b>   | <b>STANDARD</b>  | <b>REQUIREMENT</b>  |
|--|---|--|---|
| Receive Patient                                      | <ul style="list-style-type: none"> <li>• Register patient particulars in record book / Operation theatre (OT) book.</li> </ul>  | Malaysian Patient Safety Goal 2.0  | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Record book / census</li> </ul>   |
| Assess / Verify Patient / Correct Site               | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Verify correct site.</li> <li>• Verify correct procedure.</li> <li>• Ensure written consent has been taken.</li> </ul>  | <i>Manual Arahan Kerja</i><br><br>Safe Surgery Safe Life (SSSL)<br><br>Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Signed consent form</li> </ul>   |
| Prepare Instruments / Equipment/ Medication/ Implant | <ul style="list-style-type: none"> <li>• Prepare complete syringing and probing set</li> <li>• In centre privileged with nasoendoscopic services, additional nasal set preparation might be required</li> <li>• Prepare solutions.</li> <li>• Verify correct implant.</li> <li>• Check implant expiry date.</li> <li>• Prepare disposable item.</li> <li>• Verify correct medication.</li> <li>• Check medication expiry date.</li> </ul> |  | <ul style="list-style-type: none"> <li>• Syringing Set               <ol style="list-style-type: none"> <li>i. Nettleship Punctum dilator</li> <li>ii. Lacrimal cannula</li> </ol> </li> <li>• Probing Set               <ol style="list-style-type: none"> <li>i. Bowman's probe (various sizes)</li> <li>ii. Tissue forceps</li> </ol> </li> <li>• Solutions               <ol style="list-style-type: none"> <li>i. Antiseptic</li> <li>ii. Normal saline 0.9%</li> </ol> </li> <li>• Implant               <ol style="list-style-type: none"> <li>i. Lacrimal Stent</li> </ol> </li> <li>• Disposable items               <ol style="list-style-type: none"> <li>i. Syringe 3cc</li> <li>ii. Cotton swab</li> <li>iii. Fluorescein strip</li> <li>iv. Ribbon gauze</li> </ol> </li> <li>• Medication               <ol style="list-style-type: none"> <li>i. Topical Anaesthesia</li> </ol> </li> </ul> |

|                      |  |  |   |
|----------------------|--|--|---|
| Prepare Patient      | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Inform the patient about the procedure.</li> <li>• Positioning patient in supine position</li> <li>• Clean and drape patient's eye with aseptic technique</li> </ul>   | <p>Malaysian Patient Safety Goal 2.0</p> <p><i>Manual Arahan Kerja</i></p> |   |
| Assist the Procedure | <ul style="list-style-type: none"> <li>• Wash hand and gloving.</li> <li>• Assist doctor and wait for the next instructions</li> </ul> <p><u>Steps (Perform by doctor)</u></p> <ol style="list-style-type: none"> <li>1) Administer nasal spray</li> <li>2) Make sure throat pack is inserted (to liaise with anaesthetist)</li> <li>3) Follow the syringing clinical guideline (may varies in General Anaesthesia case) (Fluorescein-stained saline is used during syringing test)</li> </ol> <p><u>PROBING</u></p> <ol style="list-style-type: none"> <li>4) Insert suitable size of bowman's probe into the canaliculi, lacrimal sac and nasolacrimal duct to open the valve of Hasner</li> <li>5) Insert lacrimal stent if the probing successful</li> <li>6) Apply antibiotic eye drop</li> </ol> |  | <ul style="list-style-type: none"> <li>• OT gown</li> <li>• Sterile glove</li> </ul> <p><u>Steps (Hand over by AMO) to doctor</u></p> <ol style="list-style-type: none"> <li>1) Observe</li> <li>2) Reconfirm with anaesthetist</li> <li>3) Nettleship punctum dilator, 3ml syringe, Lacrimal cannula, fluorescein-stained saline</li> <li>4) Bowman's probe</li> <li>5) Implant</li> <li>6) Antibiotic eye drop</li> </ol> |

|  |   |   |   |
|--|---|---|---|
| Cleaning And Sterilization of Microsurgery Instruments | Refer to Cleaning and sterilization of microsurgery instruments guideline.  | Policies and Procedure on Infection Prevention and control, MOH, 2018 (3 <sup>rd</sup> edition) | Refer to Cleaning and sterilization of microsurgery instruments guideline.                      |
| Health Education                                       | <ul style="list-style-type: none"> <li>• Post-operative care</li> <li>• Observe side effects / complications</li> <li>• Advice patient to go to eye clinic during office hour and emergency department immediately after office hour if any complication occurs.</li> <li>• Emphasize on follow up compliance (stent removal after 3 months)</li> </ul> |   |   |
| Documentation  | Record procedure  | Safe Surgery Safe Life (SSSL)   | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> <li>SSSL Form</li> </ul> |

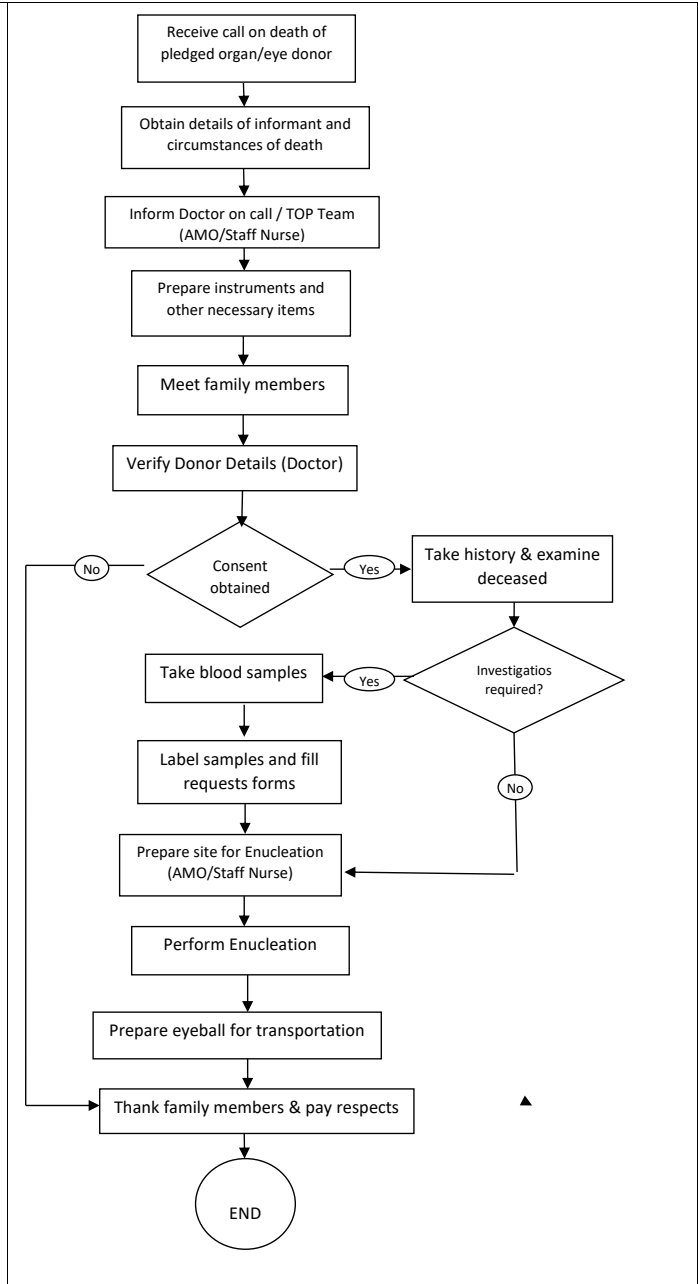
#### REFERENCE

- Hirsch, L. (Ed.). (2023, February). *Tear-duct blockage (for parents) - nemours kidshealth*. KidsHealth. <https://kidshealth.org/en/parents/tear-duct-blockage.html#:~:text=An%20ophthalmologist%20can%20do%20different,to%20open%20the%20tear%20duct>
- Joseph, J. M. (2023, March 10). *Lacrimal system probing and Irrigation*. Overview, Technique, Perioperative Care. <https://emedicine.medscape.com/article/1844121-overview?form=fpf>
- Perveen, S., Sufi, A. R., Rashid, S., & Khan, A. (2014, January). *Success rate of probing for congenital nasolacrimal duct obstruction at various ages*. Journal of ophthalmic & vision research. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4074476/>
- Feldman, B. H., Miller, A. M., Lee, K. A., Kozak, A., Kumar, A., Epley, D., Prakash, G., Yen, M. T., Marcet, M. M., & Burkat, C. N. (2023, October 29). *Nasolacrimal duct obstruction, congenital*. EyeWiki. [https://eyewiki.aao.org/Nasolacrimal\\_Duct\\_Obstruction,\\_Congenital](https://eyewiki.aao.org/Nasolacrimal_Duct_Obstruction,_Congenital)

**DONOR EYE PROCUREMENT AND PROCESSING**

|                           |   |
|---------------------------|---|
| <b>INTRODUCTION</b>       | Donor eye procurement involves the retrieval of the donor eyeball under strict aseptic precautions after contraindications have been excluded. This is followed by processing the corneal button and sclera for preservation. Eyes donated for transplantation must be retrieved before 12 hours of death. Corneas stored in Optisol GS at <4 degrees Celsius can be kept for 14 days before transplantation sclera can be stored long term in 70% alcohol. |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be assisted by privileged Assistant Medical Officer (AMO).</li> <li>• All organ donors indicated for eyeball procurement.</li> </ul>  |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• To procure the donated eyeball</li> <li>• To process the corneal button and place in corneal storage media</li> <li>• To process the scleral and place into 70% Alcohol</li> </ul>   |

**WORKFLOW**



| <b>WORK INSTRUCTION</b>   |  |                 |   |
|---|--|-----------------|---|
| <b>ACTIVITY</b>   | <b>WORK PROCESS</b>  | <b>STANDARD</b> | <b>REQUIREMENT</b>  |
| Record details of deceased  | <ul style="list-style-type: none"> <li>• Verify correct identity.</li> <li>• Verify correct deceased information.</li> </ul>   |                 | <ul style="list-style-type: none"> <li>• Donor's identity and age</li> <li>• Cause, time and circumstances of death</li> <li>• Past and recent medical history</li> <li>• Address of deceased if applicable</li> </ul>  |
| Record details of informant   | <ul style="list-style-type: none"> <li>• Verify correct identity.</li> <li>• Verify correct informant details.</li> </ul>  |                 | <ul style="list-style-type: none"> <li>• Name</li> <li>• Phone number</li> <li>• Relationship with deceased</li> </ul>  |
| Prepare equipment and materials to be used in the procurement process | <ul style="list-style-type: none"> <li>• Prepare complete &amp; sterile Enucleation</li> <li>• Prepare transport medium.</li> <li>• Prepare supplementary instruments</li> <li>• Prepare solutions.</li> <li>• Prepare disposable item.</li> </ul> |                 | <ul style="list-style-type: none"> <li>• Enucleation set.</li> <li>• Transport medium in cooler box.</li> </ul>   |
| On site pre-procurement preparation - general                         |  |                 | <ul style="list-style-type: none"> <li>• Extend condolences and establish rapport with deceased's family</li> <li>• Confirm identity of donor</li> <li>• Assist doctor in taking consent</li> <li>• Assist doctor in examination of deceased and taking blood samples if necessary</li> </ul> |

|  |   |  |   |
|--|---|--|---|
| On site pre-procurement preparation - specific       |   |  | <ul style="list-style-type: none"> <li>• Prevent exposure keratopathy by providing sufficient lubrication of the eye and gentle taping of the eyelids</li> <li>• Place a bag of crushed ice over the eyes – to keep the eye cool</li> <li>• Elevate the head to prevent venous pooling</li> </ul>   |
| Prepare procedure site                               | <ol style="list-style-type: none"> <li>1) Set up a clean work area with surgical instruments near the donor.</li> <li>2) Wear mask, wash hands and put on disposal surgical gown.</li> <li>3) Clean donor skin with Povidone iodine 10 % solution.</li> <li>4) Apply a sterile eye drape</li> </ol> | Perform procedure under aseptic precautions                    |   |
| Assist doctor in performing Enucleation of donor eye |   | Refer to OT work instructions on assisting Enucleation surgery | <ul style="list-style-type: none"> <li>• Enucleation Set:             <ol style="list-style-type: none"> <li>i. Eye speculum</li> <li>ii. Westcott curved tenotomy scissors</li> <li>iii. Moorfields Conjunctival forceps</li> <li>iv. St Martin's tooth forceps</li> <li>v. Enucleation scoop and scissors</li> <li>vi. Muscle hook</li> <li>vii. Needle holder</li> <li>viii. Artery forceps - 2</li> <li>ix. Gallipot</li> </ol> </li> </ul> |

|   |  |  |  |
|---|--|--|--|
|   |  |  | <ul style="list-style-type: none"> <li>• Consumables Items:</li> <li>i. Sterile gloves</li> <li>ii. Disposable surgical gown and masks</li> <li>iii. Sterile drape</li> <li>iv. Syringe 10ml</li> <li>v. Needle 18G</li> <li>vi. Plain blood bottles – 3</li> <li>vii. Alcohol swabs</li> <li>viii. Sterile Eye container with label – 2</li> <li>ix. Gentamicin eye drop – 1</li> <li>x. Sterile Balanced Salt Solution - 500ml</li> <li>xi. Povidone Iodine 10% for skin</li> <li>xii. Cooler Box containing ice to transport tissue</li> <li>xiii. 4-0 Silk – 1</li> <li>xiv. 6-0 Vicryl – 1</li> <li>xv. Sterile Cotton</li> <li>xvi. Sterile Gauze</li> <li>xvii. Torch light</li> <li>xviii. Basic sterile dressing packs</li> </ul> |
| Post enucleation treatment of donor eye | <p>1) Place the eye in the sterile eye container with the cornea facing upwards. Gauze can be used at the base of the container to prevent the globe from moving.</p> <p>2) Insert 2 moist cotton balls into</p> |  |  |

|  |  |  |   |
|--|--|--|---|
|  | <p>the bottom of the sterile container</p> <p>3) Place 3-4 drops of Gentamicin 0.3% on the cornea.</p> <p>4) Secure the lid of the container tightly and keep upright</p> <p>5) Place the procured cornea into the cooler box after labelling it with the donor's details: Name, I/C number, right or left eye, date and time of death, date and time of enucleation, and cause of death</p>             |  |   |
| Post Enucleation                                 | <p>1) Remove speculum and repeat for other eye</p> <p>2) Gently insert moist cotton balls into both the sockets / suture conjunctiva</p> <p>3) Close both eyelids gently and inspect the cosmetic appearance of the donor</p> <p>4) Secure eyelids with 6-0 silk</p> <p>5) Check appearance of the eye again to ensure perfect cosmesis</p> <p>6) Remove all traces of Povidone Iodine from the skin</p> |  |   |
| Corneoscleral Tissue Processing Post Procurement | <u>Steps (Perform by doctors)</u>  |  | <ul style="list-style-type: none"> <li>• Corneal Processing Set:             <ul style="list-style-type: none"> <li>i. Sterile trolley</li> </ul> </li> </ul> |

|  |   |  |   |
|--|---|--|---|
|  | <ol style="list-style-type: none"> <li>1) Assess the cornea under the surgical microscope or slit lamp according to the criteria in the criteria for assessment of donor tissue.</li> <li>2) Fill up the donor tissue assessment form (Appendix )</li> <li>3) Wrap gauze around the eye at the equator of the globe leaving the cornea exposed and ensure secure hold of the eyeball.</li> <li>4) Remove excess conjunctiva from the limbus.</li> <li>5) Make an incision 4 mm from the limbus into the choroidal space.</li> <li>6) Using a Westcott scissors, make a 360 degree incision around the limbus.</li> <li>7) Use a fine tooth forceps to lift the edge of the cornea and carefully peel the cornea off the iris until it is free (DO NOT BUCKLE THE CORNEA)</li> <li>8) Prepare the sclera</li> <li>9) Excise the remnants of the Tenon's capsule, extraocular muscles and optic nerve</li> <li>10) Remove all intraocular contents with the evisceration scoop</li> </ol> |  | <ol style="list-style-type: none"> <li>ii. Gallipot - 3</li> <li>iii. Scalpel Blade No.11</li> <li>iv. Bard Parker handle</li> <li>v. Westcott scissors</li> <li>vi. Fine tooth forceps</li> <li>vii. Evisceration Scoop</li> </ol> <ul style="list-style-type: none"> <li>• Consumables Items: <ol style="list-style-type: none"> <li>i. Sterile gloves</li> <li>ii. Disposable surgical gown and masks</li> <li>iii. Povidone iodine 5%</li> <li>iv. Labelled sterile eye container with 70% alcohol – 2</li> <li>v. Labelled Optisol GC (cornea preservative media) - 2</li> <li>vi. Donor Information form - 2</li> <li>vii. Sterile Balanced Salt Solution 0.5L</li> <li>viii. Gauze</li> <li>ix. Alcohol 70%</li> <li>x. Cooler Box containing ice to transport tissue</li> <li>xi. Donor information form - 2</li> </ol> </li> </ul> |
|--|---|--|---|

|  |   |  |  |
|--|---|--|--|
|  | 11) Rinse the sclera in Balanced salt solution<br>12) Store sclera in a container with 70%.<br>13) Label the scleral container. |  |  |
|--|---|--|--|

## REFERENCE

Moshfeghi, D. M., Moshfeghi, A. A., & Finger, P. T. (2000). Enucleation. *Survey of ophthalmology*, 44(4), 277–301. [https://doi.org/10.1016/s0039-6257\(99\)00112-5](https://doi.org/10.1016/s0039-6257(99)00112-5)

Hofmann, N., Wittmershaus, I., Salz, A.-K., & Börgel, M. (2020). Cornea procurement and processing up to 72 hours: No risk for cornea transplant quality. *Transfusion Medicine and Hemotherapy*, 48(1), 3–11. <https://doi.org/10.1159/000510588>

I, K., & OJC, H. (2021). A brief review of corneal transplantation: Techniques, indications and methods of corneal preservation. *Journal of Translational Science*, 7(1). <https://doi.org/10.15761/jts.1000387>

Yousuf, S. J., Jones, L. S., & Kidwell, E. D., Jr (2012). Enucleation and evisceration: 20 years of experience. *Orbit (Amsterdam, Netherlands)*, 31(4), 211–215. <https://doi.org/10.3109/01676830.2011.639477>

## AMNIOTIC MEMBRANE TRANSPLANTATION (AMT)

|                           |   |
|---------------------------|---|
| <b>INTRODUCTION</b>       | Amniotic membrane, or amnion, is the innermost layer of the placenta and consists of a thick basement membrane and an avascular stromal matrix. Amniotic membrane transplantation has been used as a graft or as a dressing in different surgical subspecialties to promote healing.  |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be assisted by privileged Assistant Medical Officer (AMO).</li> <li>• All patient with specific cornea disorder requiring AMT</li> </ul>  |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• To reconstruct the ocular surface after various procedures.</li> <li>• As a graft for ocular surface melts.</li> <li>• As a bandage to promote healing in cases of persistent epithelial defects or ocular surface inflammation.</li> </ul>  |
| <b>WORKFLOW</b>           | <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive patient]     Receive --&gt; Assess[Assess / verify patient / correct site / allergy status]     Assess --&gt; Fit{Fit for Procedure?}     Fit -- No --&gt; Refer[Refer to doctor]     Fit -- Yes --&gt; PrepareInst[Prepare instruments / equipment/ medication]     PrepareInst --&gt; PreparePat[Prepare patient]     PreparePat --&gt; Assist[Assist the procedure]     Assist --&gt; Clean[Cleaning and Sterilization of Microsurgical Instruments]     Clean --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End   </pre> |

| WORK INSTRUCTION  |   |   |   |
|---|---|---|---|
| ACTIVITY  | WORK PROCESS  | STANDARD  | REQUIREMENT   |
| Receive Patient   | <ul style="list-style-type: none"> <li>• Register patient particulars in OT book</li> </ul>   | Malaysian Patient Safety Goal 2.0   | <ul style="list-style-type: none"> <li>• Patient appointment card / Record</li> <li>• Record book/census</li> </ul>   |
| Assess / Verify Patient / Correct Site / Allergy Status | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Verify correct site.</li> <li>• Verify correct procedure.</li> <li>• Verify allergy status</li> <li>• Ensure written consent has been taken.</li> </ul> | <p><i>Manual Arahan Kerja</i></p> <p>Safe Surgery Safe Life (SSSL)</p> <p>Malaysian Patient Safety Goal 2.0</p> | <ul style="list-style-type: none"> <li>• Safe Surgery Safe Life (SSSL) form</li> <li>• OT list</li> <li>• Consent form</li> </ul>   |
| Prepare Instruments / Equipment                         | <ul style="list-style-type: none"> <li>• Make sure microscope works perfectly.</li> <li>• Prepare supplementary instruments</li> <li>• Prepare solutions.</li> <li>• Prepare disposable item.</li> </ul>                            |   | <ul style="list-style-type: none"> <li>• Microscope.</li> <li>• Supplementary instruments               <ol style="list-style-type: none"> <li>Eye speculum</li> <li>Straight scissors</li> <li>Calipers</li> <li>Kimura spatula</li> <li>Conjunctival Forceps</li> <li>Suture tying forcep -2</li> <li>Trephines for AMT on cornea</li> <li>Needle holder</li> <li>Vannas scissors</li> <li>Wescott scissors</li> </ol> </li> <li>• Solutions               <ol style="list-style-type: none"> <li>Antiseptic lotion</li> <li>Balance Salt Solution.</li> </ol> </li> <li>• Disposable item               <ol style="list-style-type: none"> <li>Dressing set</li> <li>Surgical eye Drape/cataract towel</li> <li>Cotton buds</li> </ol> </li> </ul> |

|                      |   |                            |   |
|----------------------|---|----------------------------|---|
|                      | <ul style="list-style-type: none"> <li>• Verify correct medication.</li> <li>• Check medication expiry date.</li> </ul>   |                            | <ul style="list-style-type: none"> <li>iv. 5cc Syringe with Rycroff cannula</li> <li>v. Suture 8.0 Vicryl (Conjunctiva) or Nylon 10/0 (Cornea)</li> <li>vi. crescent blade (if required)</li> <li>vii. Surgical marker</li> <li>viii. Bandage contact lens (BCL)</li> </ul> <ul style="list-style-type: none"> <li>• Medication <ul style="list-style-type: none"> <li>i. Topical anaesthesia</li> <li>ii. Topical Antibiotics drop/ointment</li> </ul> </li> </ul> |
| Prepare Patient      | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Explain the purpose of and the procedure to patient and / or relatives</li> <li>• Position the patient comfortably in supine position.</li> <li>• Ensure good lighting</li> </ul>   | <i>Manual Arahan Kerja</i> |   |
| Assist the Procedure | <ul style="list-style-type: none"> <li>• Hand washing, gowning and gloving using aseptic technique and proper sterile attire.</li> <li>• Assist doctor and wait for the next instructions</li> </ul> <p><u>Steps (Perform by doctor)</u></p> <ol style="list-style-type: none"> <li>1) Area cleaned and draped</li> </ol> |                            | <ul style="list-style-type: none"> <li>• OT gown</li> <li>• Sterile glove</li> <li>• Surgical face mask</li> </ul> <p><u>Steps (Handover by AMO)</u></p> <ol style="list-style-type: none"> <li>1) Dressing set with antiseptic solution and</li> </ol>   |

|  |   |   |  |
|--|---|---|--|
|  | <p>2) Topical or local anesthesia</p> <p>3) Loose corneal epithelium and any superficial necrotic tissue are completely debrided.</p> <p>4) The area to be covered is measured.</p> <p>5) The amniotic membranes cut according to the size required either with trephine or free hand.</p> <p>6) The amniotic membrane is placed with the epithelial surface facing up and the stromal side (sticky surface) facing down.</p> <p>7) At the end of surgery, a bandage soft contact lens is inserted for AMT placed on the cornea.</p> <p>8) The eye is then padded for 24 to 48 hours with ointment antibiotics.</p> <p>9) Post-operatively, topical antibiotic will be applied.</p> |   | <p>sterile eye drape/cataract towel</p> <p>2) Gutt Propacaine (Alcaine 0.5%) or lignocaine 2%</p> <p>3) Kimura spatula or crescent blade</p> <p>4) Callipers and surgical marker</p> <p>5) AMT with Trephine or straight scissor</p> <p>6) Needle holder, 2 Suture tying forceps, suture 8.0 Vicryl for conjunctiva and 10.0 Nylon for cornea and Wescott/vannas scissor</p> <p>7) Bandage Contact Lens (BCL)</p> <p>8) Eye pad &amp; eye shield</p> <p>9) Topical antibiotic drops/ointment</p> |
| Cleaning and Sterilization of Microsurgery Instruments | Refer to Cleaning and sterilization of microsurgery instruments guideline.  | Policies and Procedure on Infection Prevention and control, MOH, 2018 (3 <sup>rd</sup> edition) | Refer to Cleaning and sterilization of microsurgery instruments guideline.   |

|                  |   |                               |   |
|------------------|---|-------------------------------|---|
| Health Education | <ul style="list-style-type: none"> <li>• Wash hands well when apply the medication</li> <li>• Observe BCL in site</li> <li>• Monitor for an eye infection</li> <li>• Avoid rubbing eyes.</li> </ul> |                               |   |
| Documentation    | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>  | Safe Surgery Safe Life (SSSL) | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> <li>• SSSL Form</li> <li>• Patient record</li> </ul> |

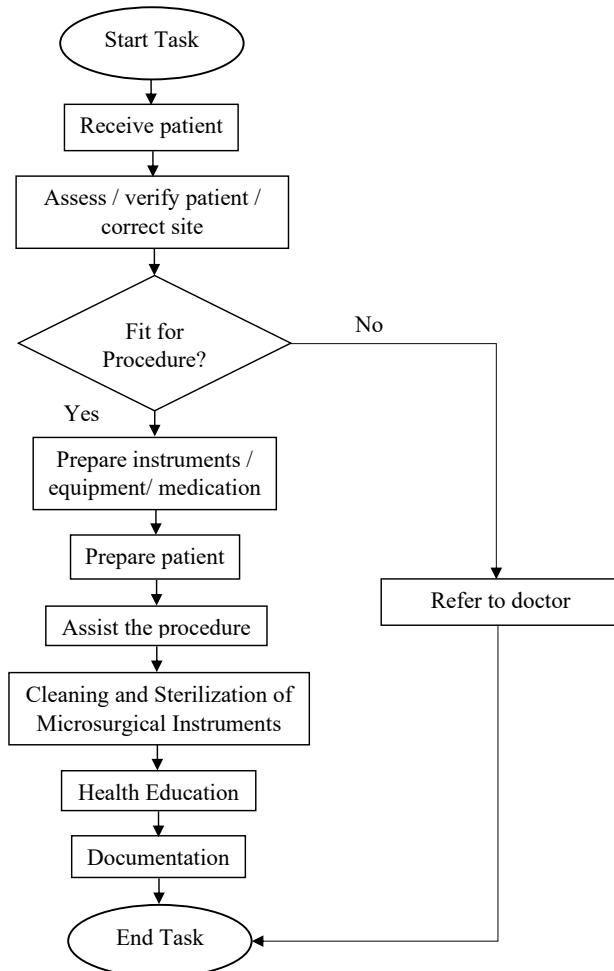
## REFERENCE

- Meller, D., Pauklin, M., Thomasen, H., Westekemper, H., & Steuhl, K. P. (2011). Amniotic membrane transplantation in the human eye. *Deutsches Arzteblatt international*, 108(14), 243–248. <https://doi.org/10.3238/arztebl.2011.0243>
- Sharma, R., Nappi, V., & Empeplidis, T. (2023). The developments in amniotic membrane transplantation in glaucoma and vitreoretinal procedures. *International ophthalmology*, 43(5), 1771–1783. <https://doi.org/10.1007/s10792-022-02570-5>
- Walkden, A. (2020). Amniotic Membrane Transplantation in Ophthalmology: An Updated Perspective. *Clinical Ophthalmology, Volume 14*, 2057–2072. <https://doi.org/10.2147/oph.s208008>
- Ferency, P. A., & Souza, L. B. (2020). Comparison of the preparation and preservation techniques of amniotic membrane used in the treatment of ocular surface diseases. *Revista Brasileira de Oftalmologia*, 79(1). <https://doi.org/10.5935/0034-7280.20200016>

## DESCEMET STRIPPING AUTOMATED ENDOTHELIAL KERATOPLASTY (DSAEK)

|                           |  |
|---------------------------|--|
| <b>INTRODUCTION</b>       | DSAEK is a partial thickness cornea transplantation that involves selective removal of the patient's Descemet membrane and endothelium, followed by transplantation of donor corneal endothelium, Descemet membrane and a portion of the donor corneal stroma. The transplanted tissue is approximately 100-200 microns thick. |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be assisted by privileged Assistant Medical Officer (AMO).</li> <li>• All patient requiring partial thickness cornea transplantation.</li> </ul>   |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• To treat bullous keratopathy due to various causes of endothelial dysfunction/failure.</li> </ul>   |

### WORKFLOW



| WORK INSTRUCTION  |  |                                   |   |
|---|--|-----------------------------------|---|
| ACTIVITY  | WORK PROCESS   | STANDARD                          | REQUIREMENT   |
| Receive Patient   | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Register the patient particulars in Patient's Record Book</li> </ul>   | Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Referral letter</li> <li>• OT list</li> <li>• Record book / census</li> </ul>   |
| Assess / Verify Patient / Correct Site / Allergy Status | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Verify correct site.</li> <li>• Verify correct procedure.</li> <li>• Explain to the patient the indication of the procedure.</li> <li>• Ensure written consent has been taken</li> </ul> | Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Patient record.</li> <li>• Signed consent form</li> <li>• Safe Surgery Safe Life (SSSL) Form</li> <li>• OT list</li> <li>• Medication chart</li> </ul>   |
| Prepare Instruments / Equipment / Medication            | <ul style="list-style-type: none"> <li>• Make sure microscope machine works perfectly.</li> <li>• Prepare complete &amp; sterile eye cleansing set.</li> <li>• Prepare supplementary instruments</li> </ul>  |                                   | <ul style="list-style-type: none"> <li>• Microscope machine.</li> <li>• Dressing Set</li> <li>• DSAEK Set.</li> <li><b>*Refer Appendix 8</b></li> <li>• Supplementary instrument               <ol style="list-style-type: none"> <li>90° Spatula</li> <li>Calipers</li> <li>Trephine</li> <li>Barraquer needle holder</li> <li>Suture tying – 2</li> <li>Vannas scissor</li> <li>Bonn-Moria forceps</li> <li>Reverse Terry-sinsky</li> <li>Irrigation Port</li> <li>Sinsky Hook</li> <li>Eye Speculum</li> <li>Corneal Marker</li> </ol> </li> </ul> |

|                 |   |                            |   |
|-----------------|---|----------------------------|---|
|                 | <ul style="list-style-type: none"> <li>• Prepare solutions.</li> <li>• Prepare disposable item.</li> <li>• Verify correct medication.</li> <li>• Check medication expiry date.</li> </ul>   |                            | <p>xiii. O’gawa Forceps<br/>xiv. Gorovoy Descemetorhexis Forceps</p> <ul style="list-style-type: none"> <li>• Solutions             <ol style="list-style-type: none"> <li>i. Antiseptic solution</li> <li>ii. Balance salt solution (BSS)</li> </ol> </li> <li>• Disposable item             <ol style="list-style-type: none"> <li>i. 15° Blade</li> <li>ii. 2.75mm Blade</li> <li>iii. MVR blade (if req)</li> <li>iv. Sterile marker</li> <li>v. Fluorescein Strip</li> <li>vi. Vicryl 8-0 suture for conjunctival and nylon 10.0 suture for cornea</li> <li>vii. Sterile gauze</li> <li>viii. Sponge spears</li> <li>ix. Sterile cotton bud</li> <li>x. Bandage contact Lens (BCL)</li> </ol> </li> <li>• Medication             <ol style="list-style-type: none"> <li>i. Topical anaesthesia</li> <li>ii. Topical Steroid</li> <li>iii. Topical Antibiotics</li> </ol> </li> </ul> |
| Prepare Patient | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Explain to the patient the Surgical Operation to be carried out</li> <li>• Position the patient in supine position.</li> <li>• Place a linen protector under the intended area</li> </ul> | <i>Manual Arahan Kerja</i> |   |

|                      |   |  |  |
|----------------------|---|--|--|
|                      | <ul style="list-style-type: none"> <li>• Clean and drape patient's eye with clean / aseptic technique</li> </ul>  |  |  |
| Assist the Procedure | <ul style="list-style-type: none"> <li>• Hand washing, gowning and gloving using aseptic technique and proper sterile attire.</li> <li>• Assist doctor and wait for the next instructions</li> </ul> <p><u>Steps (Perform by doctor)</u></p> <ol style="list-style-type: none"> <li>1) Prepare the graft by pre-cutting the donor using microkeratome.</li> <li>2) Mark the incision sites on the cornea.</li> <li>3) Create a paracentesis and insert anterior chamber maintainer.</li> <li>4) Mark the corneal surface to outline area of Descemet membrane to be removed.</li> <li>5) Use a reverse Sinsky hook to score Descemet membrane</li> <li>6) Remove the detached Descemet membrane using forceps.</li> <li>7) Trephine the donor tissue</li> <li>8) Put the donor tissue onto a Busin glide spatula</li> <li>9) Insert the donor tissue into the anterior chamber</li> </ol> |  | <ul style="list-style-type: none"> <li>• OT gown</li> <li>• Sterile glove</li> <li>• Surgical face mask</li> </ul> <p><u>Steps (Handover by AMO)</u></p> <ol style="list-style-type: none"> <li>1) Microkeratome</li> <li>2) surgical marker pen</li> <li>3) 15-degree blade and AC maintainer with BSS</li> <li>4) Observe</li> <li>5) Reverse Sinsky hook</li> <li>6) Gorovoy Descemetorhexis Forceps</li> <li>7) Trephine and donor cornea tissue</li> <li>8) Busin Glide spatula and Moria forcep</li> <li>9) Observe</li> </ol> |

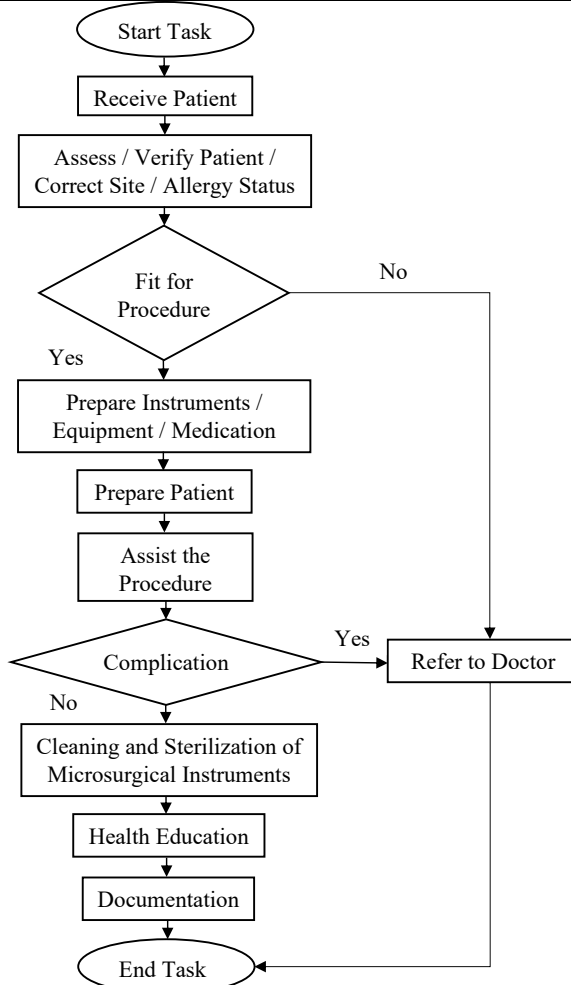
|  |  |   |   |
|--|--|---|---|
|  | <p>10) Unfold and float the donor graft using BSS</p> <p>11) Remove the Anterior chamber maintainer</p> <p>12) Suture the corneal incision with 10-0 nylon suture.</p> <p>13) Position the graft centrally</p> <p>14) Fill the anterior chamber with air to pressurize the eye.</p> <p>15) Perform venting incisions.</p> <p>16) Wait 10 minutes to allow adherence.</p> <p>17) Dilate the pupil fully.</p> <p>18) Partially release the full air fill.</p> <p>19) Subconjunctival antibiotic and steroid injection given before padding the eye with antibiotic ointment.</p> |   | <p>10) 5cc syringe with BSS</p> <p>11) Observe</p> <p>12) Barraquer needle holder, 2 suture tying forcep, vannas scissor</p> <p>13) Reverse terry sinskey</p> <p>14) 3cc syringe with Rycroft and fill up with air</p> <p>15) MVR blade</p> <p>16) Observe</p> <p>17) Observe</p> <p>18) 3cc syringe with Rycroft</p> <p>19) 3cc syringe with gentamycin 20mg and dexamethasone 2mg for subconjunctival injection</p> <p>20) eye pad/shield</p> |
| Cleaning And Sterilization of Microsurgery Instruments | Refer to Cleaning and sterilization of microsurgery instruments guideline.   | Policies and Procedure on Infection Prevention and control, MOH, 2018 (3 <sup>rd</sup> edition) | Refer to Cleaning and sterilization of microsurgery instruments guideline.  |
| Health Education                                       | <ul style="list-style-type: none"> <li>• Post-operative care <ul style="list-style-type: none"> <li>i. Wash hands well when apply the medication</li> <li>ii. Post operatively a BCL will be placed</li> <li>iii. Monitor for an eye infection</li> <li>iv. Avoid rubbing eyes frequently</li> </ul> </li> <li>• Strict positioning without pillow for the first day</li> </ul>  |   |   |

|               |  |                               |   |
|---------------|--|-------------------------------|---|
| Documentation | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul> | Safe Surgery Safe Life (SSSL) | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> <li>• SSSL Form</li> </ul> |
|---------------|--|-------------------------------|---|

## REFERENCE

- Sharma, N., Maharana, P. K., Singhi, S., Aron, N., & Patil, M. (2017). Descemet stripping automated endothelial keratoplasty. *Indian journal of ophthalmology*, 65(3), 198–209. [https://doi.org/10.4103/ijjo.IJO\\_874\\_16](https://doi.org/10.4103/ijjo.IJO_874_16)
- Anshu, A., Price, M. O., Tan, D. T., & Price, F. W., Jr (2012). Endothelial keratoplasty: a revolution in evolution. *Survey of ophthalmology*, 57(3), 236–252. <https://doi.org/10.1016/j.survophthal.2011.10.005>
- Vajpayee, R. B., Maharana, P. K., Jain, S., Sharma, N., & Jhanji, V. (2014). Thin lenticule Descemet's stripping automated endothelial keratoplasty: single, slow pass technique. *Clinical & experimental ophthalmology*, 42(5), 411–416. <https://doi.org/10.1111/ceo.12271>
- Busin, M., Madi, S., Santorum, P., Scorgia, V., & Beltz, J. (2013). Ultrathin descemet's stripping automated endothelial keratoplasty with the microkeratome double-pass technique: two-year outcomes. *Ophthalmology*, 120(6), 1186–1194. <https://doi.org/10.1016/j.ophtha.2012.11.030>

**PENETRATING KERATOPLASTY (PK) SURGERY**

|                           |   |
|---------------------------|---|
| <b>INTRODUCTION</b>       | Penetrating keratoplasty (PK) is a corneal transplant procedure in which the full-thickness recipient cornea is replaced with donor corneal tissue. A trephine of an appropriate diameter is used to make a full-thickness resection of the patient's cornea. The graft is secured with interrupted and/or running sutures. This procedure is done with general anaesthesia.  |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be assisted by a privileged Assistant Medical Officer (AMO).</li> <li>• All patients requiring cornea transplants.</li> </ul>   |
| <b>SPECIFIC OBJECTIVE</b> | To treat corneal blindness due to diseases of the corneal involving the epithelial, stroma, and or endothelial cells.   |
| <b>WORKFLOW</b>           |  <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive Patient]     Receive --&gt; Assess[Assess / Verify Patient /<br/>Correct Site / Allergy Status]     Assess --&gt; Fit{Fit for<br/>Procedure}     Fit -- No --&gt; Refer[Refer to Doctor]     Fit -- Yes --&gt; PrepareInst[Prepare Instruments /<br/>Equipment / Medication]     PrepareInst --&gt; PreparePat[Prepare Patient]     PreparePat --&gt; Assist[Assist the<br/>Procedure]     Assist --&gt; Comp{Complication}     Comp -- Yes --&gt; Refer     Comp -- No --&gt; Clean[Cleaning and Sterilization of<br/>Microsurgical Instruments]     Clean --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End   </pre> <p>The workflow diagram for Penetrating Keratoplasty (PK) Surgery is as follows:</p> <ol style="list-style-type: none"> <li>Start Task</li> <li>Receive Patient</li> <li>Assess / Verify Patient / Correct Site / Allergy Status</li> <li>Decision: Fit for Procedure       <ul style="list-style-type: none"> <li>If No: Refer to Doctor</li> <li>If Yes: Proceed to Prepare Instruments / Equipment / Medication</li> </ul> </li> <li>Prepare Instruments / Equipment / Medication</li> <li>Prepare Patient</li> <li>Assist the Procedure</li> <li>Decision: Complication       <ul style="list-style-type: none"> <li>If Yes: Refer to Doctor</li> <li>If No: Proceed to Cleaning and Sterilization of Microsurgical Instruments</li> </ul> </li> <li>Cleaning and Sterilization of Microsurgical Instruments</li> <li>Health Education</li> <li>Documentation</li> <li>End Task</li> </ol> |

| WORK INSTRUCTION  |  |   |  |
|---|--|---|--|
| ACTIVITY  | WORK PROCESS   | STANDARD  | REQUIREMENT  |
| Receive Patient   | <ul style="list-style-type: none"> <li>Register patient particulars in the patient's record book</li> </ul>  | Malaysian Patient Safety Goal 2.0   | <ul style="list-style-type: none"> <li>Patient appointment card/record</li> <li>Record book/census</li> </ul>  |
| Assess / Verify Patient / Correct Site / Allergy Status | <ul style="list-style-type: none"> <li>Verify correct patient.</li> <li>Verify the correct site.</li> <li>Verify correct procedure.</li> <li>Verify allergy status</li> <li>Ensure written consent has been taken</li> </ul> | <p><i>Manual Arahan Kerja</i></p> <p>Safe Surgery Safe Life (SSSL)</p> <p>Malaysian Patient Safety Goal 2.0</p> | <ul style="list-style-type: none"> <li>Written consent form</li> <li>Safe Surgery Safe Life (SSSL) Form</li> <li>OT list</li> </ul>  |
| Prepare Instruments / Equipment / Medication / Implant  | <ul style="list-style-type: none"> <li>Prepare microscope and Bipolar cautery machine</li> <li>Prepare a complete and sterile Penetrating Keratoplasty set.</li> <li>Prepare supplementary instruments</li> </ul>            |   | <ul style="list-style-type: none"> <li>Microscope machine.</li> <li>Bipolar cautery machine</li> <li>Penetrating Keratoplasty Set. <b>*Refer Appendix 9</b></li> <li>Supplementary instruments               <ol style="list-style-type: none"> <li>Eye speculum</li> <li>Calipers</li> <li>Cornea scissor right/left</li> <li>Corneal.12mm forcep or colibri forceps</li> <li>Suture-tying forcep-2</li> <li>Vannas scissor</li> <li>Wescott scissor</li> <li>Tooth forcep</li> <li>Conjunctival forcep</li> <li>Trephines</li> <li>Simcoe IA set</li> <li>Dressing set</li> <li>Bipolar cautery</li> </ol> </li> </ul> |

|  |  |   |
|--|--|---|
|  | <ul style="list-style-type: none"> <li>• Prepare solutions.</li> <br/> <li>• Prepare disposable items.</li> <br/> <br/> <br/> <br/> <br/> <br/> <br/> <br/> <br/> <li>• Verify correct medication.</li> <li>• Check medication expiry date.</li> </ul> | <ul style="list-style-type: none"> <li>xiv. Microscope handle</li> <br/> <li>• Solutions       <ul style="list-style-type: none"> <li>i. Antiseptic solution</li> <li>ii. Balanced salt solutions (BSS)</li> </ul> </li> <br/> <li>• Disposable item       <ul style="list-style-type: none"> <li>i. Ophthalmic drape</li> <li>ii. Keratometer (intraoperative)</li> <li>iii. 5cc Syringe -1</li> <li>iv. Rycroft</li> <li>v. 3cc syringe -2</li> <li>vi. Hypodermic Needle 21/26G</li> <li>vii. 10-0 Nylon suture</li> <li>viii. 4-0 Silk suture (if required)</li> <li>ix. 15-degree angle blade</li> <li>x. Viscoelastic Device</li> <li>xi. Fluorescein Strip</li> <li>xii. Sponge spears</li> <li>xiii. Sterile cotton bud</li> <li>xiv. Sterile marker pen</li> <li>xv. Eye pad/shield.</li> </ul> </li> <br/> <li>• Medication       <ul style="list-style-type: none"> <li>i. Topical anaesthesia</li> <li>ii. Sub conjunctival Gentamicin 20mg</li> <li>iii. Sub conjunctival Dexamethasone 2mg</li> <li>iv. Topical/ointment Antibiotics</li> </ul> </li> <li>• Corneal tissue stored in corneal storage media solution.</li> </ul> |
|--|--|---|

|                      |   |  |   |
|----------------------|---|--|---|
| Prepare Patient      | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Inform the patient about the procedure.</li> <li>• Position the patient in supine position on the OT table.</li> <li>• Clean and drape the patient's eye with aseptic technique</li> </ul>  | <p>Malaysian Patient Safety Goal 2.0</p> <p><i>Manual Arahan Kerja</i></p> | <ul style="list-style-type: none"> <li>• Patient record</li> <li>• Dilating eye drop</li> <li>• Antiseptic</li> <li>• Eye Drape</li> </ul>  |
| Assist the Procedure | <ul style="list-style-type: none"> <li>• Hand washing, gowning, and gloving using an aseptic technique and proper sterile attire.</li> <li>• Assist the doctor and wait for the next instructions</li> </ul> <p><u>Steps (Perform by doctor)</u></p> <ol style="list-style-type: none"> <li>1) Apply eye speculum.</li> <li>2) Placement of bridle sutures.</li> <li>3) Determination of the graft size.</li> <li>4) Prepare the donor button as required.</li> <li>5) Place the donor button on the Teflon block with</li> </ol> |  | <ol style="list-style-type: none"> <li>1) OT gown</li> <li>2) Sterile glove</li> </ol> <p><u>Steps (Hand over by AMO)</u></p> <ol style="list-style-type: none"> <li>1) Eye speculum</li> <li>2) Squint hook, tooth forceps, 4-0 silk mounted on a needle holder, straight scissors, artery forceps.</li> <li>3) Caliper, sterile marker pen, trephine</li> <li>4) Corneal button in cornea storage media solution, tooth forceps, corneal trephine (size as requested by surgeon), corneal 0.12mm forceps, sponge spears</li> <li>5) Cornea storage media solution in 3cc syringe and gallipot.</li> </ol> |

|  |   |  |   |
|--|---|--|---|
|  | <p>some cornea storage media solution</p> <p>6) Pre-trephination preparation of the recipient</p> <p>7) Trephination of the recipient cornea</p> <p>8) Suturing of donor corneal tissue onto the recipient bed.</p> <p>9) Removal of viscoelastic device and suturing of paracentesis.</p> <p>10) Reformation of anterior chamber, inspection of wound integrity and astigmatism</p> <p>11) Subconjunctival injection</p> |  | <p>6) 15-degree angle blade and viscoelastic device.</p> <p>7) Corneal trephine-size as requested by surgeon, sterile marker pen, corneal forceps 0.12mm, 15-degree angle blade or diamond knife, viscoelastic device, corneal scissors right and left.</p> <p>8) Corneal forceps 0.12mm, pollock forceps, colibri forceps, 10-0 nylon suture mounted on a needle holder, 2 suture tying forceps, vannas scissors, sponge spears, BSS in a Bishop Harmon set</p> <p>9) Simcoe IA with BSS, corneal forceps 0.12, 10-0 nylon suture mounted on a needle holder, suture tying forceps, vannas scissors.</p> <p>10) Fluorescein strips, sponge spears, BSS on a 5cc syringe, keratometer (intraoperative)</p> <p>11) Pre-prepared antibiotic with steroid in 3cc syringe and 26G needle.</p> |
|--|---|--|---|

|  |  |   |  |
|--|--|---|--|
|  | <p>12) Clean and apply eye shield with or without eye pad.</p> <p>13) (Alternative Process/Variation)<br/>Conjunctival periotomy (After placement of bridle suture)</p> <p>14) (Alternative Process/Variation)<br/>Placement of sclera fixation ring (After the placement of bridle suture or periotomy)</p>                       |   | <p>12) Wet and dry gauze, eye shield, eye pad, antibiotic with steroid eye drop / ointment.</p> <p>13) Conjunctival forceps, conjunctiva scissors, bipolar cautery</p> <p>14) Corneal forceps, double armed 8-0 Vicryl mounted on a needle holder, scleral fixation ring, suture tying forceps, conjunctival scissors.</p> |
| Cleaning And Sterilization of Microsurgery Instruments | Refer to Cleaning and sterilization of microsurgery instruments guideline.   | Policies and Procedure on Infection Prevention and control, MOH, 2018 (3 <sup>rd</sup> edition) | Refer to Cleaning and sterilization of microsurgery instruments guideline.   |
| Health Education                                       | <ul style="list-style-type: none"> <li>• Positioning in a supine position</li> <li>• Observe side effect/complications</li> <li>• Advice patient to go to Eye clinic during office hours or Emergency department immediately after office hours if any complication occurs</li> <li>• Emphasize on follow up compliance</li> </ul> |   |  |
| Documentation  | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>   | Safe Surgery Safe Life (SSSL)   | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> <li>• SSSL Form</li> </ul>  |

**REFERENCE**

- Boynton, G. E., & Woodward, M. A. (2015). Evolving Techniques in Corneal Transplantation. *Current surgery reports*, 3(2), <http://link.springer.com/article/10.1007/s40137-014-0079-5/fulltext.html>. <https://doi.org/10.1007/s40137-014-0079-5>
- Woodward, M. A., Titus, M., Mavin, K., & Shtein, R. M. (2012). Corneal donor tissue preparation for endothelial keratoplasty. *Journal of visualized experiments : JoVE*, (64), e3847. <https://doi.org/10.3791/3847>
- Beckingsale, P., Mavrikakis, I., Al-Yousuf, N., Mavrikakis, E., & Daya, S. M. (2006). Penetrating keratoplasty: outcomes from a corneal unit compared to national data. *The British journal of ophthalmology*, 90(6), 728–731. <https://doi.org/10.1136/bjo.2005.086272>
- Kim, J. G., & Jun, J. H. (2022). Therapeutic and tectonic keratoplasty with simple cryopreserved remnants of donor corneas: an 11 year retrospective case series. *Scientific reports*, 12(1), 7331. <https://doi.org/10.1038/s41598-022-10994-3>

| <b>DACRYOCYSTORHINOSTOMY (DCR)</b> |   |
|------------------------------------|---|
| <b>INTRODUCTION</b>                | DCR is the surgical correction of Nasolacrimal Duct Obstruction (NLDO), aims to established a new drainage pathway between the lacrimal sac and the nose. NLDO is a condition that resulting the overflow of tears (epiphora) or infection of the nasolacrimal sac.   |
| <b>SCOPE</b>                       | <ul style="list-style-type: none"> <li>• The procedure will be assisted by a privileged Assistant Medical Officer (AMO).</li> <li>• All patient with Nasolacrimal Duct Obstruction (NLDO).</li> </ul>   |
| <b>SPECIFIC OBJECTIVE</b>          | <ul style="list-style-type: none"> <li>• To create new passage for tear drainage.</li> </ul>  |
| <b>WORKFLOW</b>                    | <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive Patient]     Receive --&gt; Assess[Assess / Verify Patient /<br/>Correct Site / Allergy Status]     Assess --&gt; Fit{Fit for<br/>Procedure}     Fit -- No --&gt; Refer[Refer to Doctor]     Fit -- Yes --&gt; PrepareInst[Prepare Instruments /<br/>Equipment / Medication]     PrepareInst --&gt; PreparePat[Prepare Patient]     PreparePat --&gt; Assist[Assist the<br/>Procedure]     Assist --&gt; Comp{Complication}     Comp -- Yes --&gt; Refer     Comp -- No --&gt; Clean[Cleaning and Sterilization of<br/>Microsurgical Instruments]     Clean --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End   </pre> |

| WORK INSTRUCTION  |   |   |   |
|---|---|---|---|
| ACTIVITY  | WORK PROCESS  | STANDARD  | REQUIREMENT   |
| Receive Patient   | <ul style="list-style-type: none"> <li>• Register patient particulars in patient's record book</li> </ul>   | Malaysian Patient Safety Goal 2.0   | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Record book / census</li> </ul>   |
| Assess / Verify Patient / Correct Site / Allergy Status | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Verify correct site.</li> <li>• Verify correct procedure.</li> <li>• Verify allergy status</li> <li>• Ensure written consent has been taken.</li> </ul>                               | <p><i>Manual Arahan Kerja</i></p> <p>Safe Surgery Safe Life (SSSL)</p> <p>Malaysian Patient Safety Goal 2.0</p> | <ul style="list-style-type: none"> <li>• Consent form</li> <li>• Safe Surgery Safe Life (SSSL) Form</li> <li>• Operation theatre (OT) list</li> </ul>   |
| Prepare Instruments / Equipment / Medication / Implant  | <ul style="list-style-type: none"> <li>• Make sure suction machine works perfectly.</li> <li>• Prepare complete &amp; sterile DCR set.</li> <li>• Prepare supplementary instruments</li> <li>• Prepare solutions.</li> <li>• Prepare disposable items.</li> </ul> |   | <ul style="list-style-type: none"> <li>• Suction machine</li> <li>• DCR Set</li> <li><b>*Refer Appendix 10</b></li> <li>• Supplementary instruments               <ol style="list-style-type: none"> <li>i. Sterile ruler</li> <li>ii. Sterile marker</li> <li>iii. Crescent knife</li> <li>iv. Nasal speculum</li> <li>v. Illuminated eye loupe</li> <li>vi. Cautery cable &amp; forceps</li> </ol> </li> <li>• Solutions               <ol style="list-style-type: none"> <li>i. Antiseptic</li> <li>ii. Sterile water</li> </ol> </li> <li>• Disposable items               <ol style="list-style-type: none"> <li>i. Eye drape</li> <li>ii. Gauze</li> <li>iii. Cotton bud</li> <li>iv. Ribbon gauze</li> <li>v. Dressing set</li> <li>vi. 6-0 non-absorbable suture</li> <li>vii. 6-0 ½ absorbable suture</li> <li>viii. 4-0 non-absorbable suture (optional)</li> </ol> </li> </ul> |

|                      |   |  |   |
|----------------------|---|--|---|
|                      | <ul style="list-style-type: none"> <li>• Verify correct medication.</li> <li>• Check medication expiry date.</li> </ul> <p><u>Medication Preparation Step</u></p> <ol style="list-style-type: none"> <li>1) Local anaesthesia       <ol style="list-style-type: none"> <li>i. Bupivacaine &amp; Adrenaline<br/>1 in 200,000</li> </ol> </li> <li>2) Nasal packing preparation       <ol style="list-style-type: none"> <li>i. Bupivacaine &amp; Adrenaline 1 in 200,000 (1ml)<br/>+ Cocaine 5%<br/>+ Normal Saline (1ml)</li> </ol> </li> <li>3) Oxymetazoline nasal spray 2 puff (optional)</li> </ol> <ul style="list-style-type: none"> <li>• Verify correct implant.</li> <li>• Check implant expiry date.</li> </ul> |  | <ul style="list-style-type: none"> <li>• Medications       <ol style="list-style-type: none"> <li>i. Cocaine 5% solution</li> <li>ii. Nasal decongestion spray</li> <li>iii. Bupivacaine &amp; Adrenaline injection</li> <li>iv. Ointment chloramphenicol</li> </ol> </li> <li>• Implant       <ol style="list-style-type: none"> <li>i. DCR tube or stent</li> </ol> </li> </ul> |
| Prepare Patient      | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Inform the patient about the procedure.</li> <li>• Positioning patient in reverse Trendelenburg position on the bed (to inform anaesthetist)</li> <li>• Clean and drape patient's eye with aseptic technique</li> </ul>   | <p>Malaysian Patient Safety Goal 2.0</p> <p><i>Manual Arahan Kerja</i></p> | <ul style="list-style-type: none"> <li>• Patient record</li> <li>• Antiseptic</li> <li>• Head drape turban + Eye drape</li> </ul>   |
| Assist the Procedure | <ul style="list-style-type: none"> <li>• Hand washing, gowning and gloving using aseptic technique and proper sterile attire.</li> <li>• Assist doctor and wait for the next instructions</li> </ul>  |  | <ul style="list-style-type: none"> <li>• OT gown</li> <li>• Sterile glove</li> </ul>  |

|  |   |   |   |
|--|---|---|---|
|  | <u>Steps (Perform by doctor)</u> <ol style="list-style-type: none"> <li>1) Cutaneous incision</li> <li>2) Blunt dissection</li> <li>3) Traction suture@ skin retractor</li> <li>4) Periosteum elevation</li> <li>5) Osteotomy</li> <li>6) Lacrimal stent insertion</li> <li>7) Lacrimal sac incision and flap creation</li> <li>8) Preplace suture on posterior flap</li> <li>9) Local infiltration at nasal mucosal (for haemostasis purpose)</li> <li>10) Nasal mucosal incision + flap creation</li> <li>11) Suturing of posterior flap</li> <li>12) Retrieval of stent in nasal cavity</li> <li>13) Suturing of anterior flap</li> <li>14) Skin closure</li> <li>15) Skin dressing and ointment chloramphenicol application on wound</li> </ol> |   | <u>Steps (Hand over by AMO)</u> <ol style="list-style-type: none"> <li>1) Bard Parker blade size 15</li> <li>2) Straight scissor</li> <li>3) Suture silk 4-0@ Knapp retractor</li> <li>4) Freer Periosteal elevator</li> <li>5) Kerrison rongeur</li> <li>6) DCR stent</li> <li>7) Crescent knife</li> <li>8) 6-0 ½ absorbable suture</li> <li>9) Local anaesthesia</li> <li>10) Crescent knife</li> <li>11) 6-0 absorbable suture</li> <li>12) Curve artery (to grab the stent)</li> <li>13) 6-0 ½ absorbable suture</li> <li>14) 6-0 non-absorbable suture</li> <li>15) Bactigrass (if available) and dressing gauze</li> </ol> |
| Cleaning And Sterilization of Microsurgery Instruments | Refer to Cleaning and sterilization of microsurgery instruments guideline.  | Policies and Procedure on Infection Prevention and control, MOH, 2018 (3 <sup>rd</sup> edition) | Refer to Cleaning and sterilization of microsurgery instruments guideline.  |
| Health Education                                       | <ul style="list-style-type: none"> <li>• Post-operative care</li> </ul> <ol style="list-style-type: none"> <li>1) Always keep incision site clean</li> </ol>  |   |   |

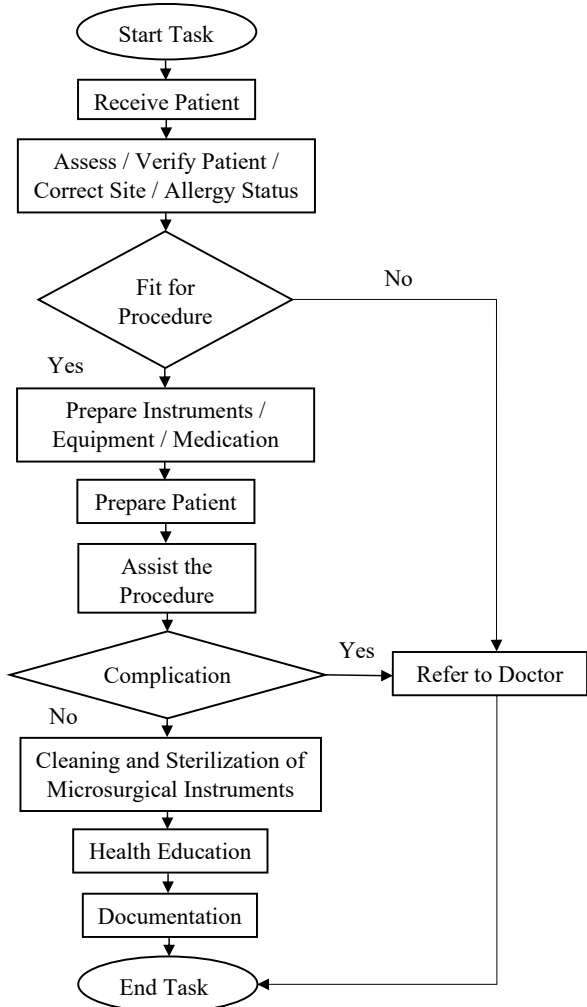
|               |  |                               |   |
|---------------|--|-------------------------------|---|
|               | <ol style="list-style-type: none"> <li>2) Use ice packs (4 times per day for 3 days) to reduce swelling</li> <li>3) Do not swim for 2 weeks after surgery</li> <li>4) Avoid excessive nose blowing and forceful sneezing</li> <li>5) Avoid hot drink and food for the first 24 hours after surgery</li> </ol> <ul style="list-style-type: none"> <li>• Observe any wound or nose bleeding</li> <li>• Advise patient to go to eye clinic during office hour and emergency department immediately after office hour if any complication occurs.</li> <li>• Emphasize on follow up compliance.</li> </ul> |                               |   |
| Documentation | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>   | Safe Surgery Safe Life (SSSL) | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> <li>• SSSL Form</li> </ul> |

## REFERENCE

- Feldman, B. H., Miller, A. M., Lee, K. A., Kozak, A., Kumar, A., Epley, D., Prakalapakorn, G., T Yen, M., Marcet, M. M., & Burkat, C. N. (2023, October 29). *Nasolacrimal duct obstruction, congenital*. EyeWiki. [https://eyewiki.aao.org/Nasolacrimal\\_Duct\\_Obstruction,\\_Congenital](https://eyewiki.aao.org/Nasolacrimal_Duct_Obstruction,_Congenital)
- Phelps, P. O., Yen, M. T., Marcet, M. M., & Burkat, C. N. (2023, September 4). *Dacryocystorhinostomy*. EyeWiki. <https://eyewiki.aao.org/Dacryocystorhinostomy>
- Ullrich K, Malhotra R, Patel BC. Dacryocystorhinostomy. 2023 Aug 7. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 Jan-. PMID: 32496731

**ORBITOTOMY SURGERY**

|                           |   |
|---------------------------|---|
| <b>INTRODUCTION</b>       | Orbitotomy is a procedure that provide access to surgical spaces in the orbit.  |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be assisted by a privileged Assistant Medical Officer (AMO).</li> <li>• All patient indicated for orbitotomy surgery.</li> </ul>    |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• To allow the removal of tumor or foreign body</li> <li>• To treat a lesion in orbital space</li> <li>• To drain an abscess in orbital space</li> </ul> |

**WORKFLOW**

| WORK INSTRUCTION  |   |   |   |
|---|---|---|---|
| ACTIVITY  | WORK PROCESS  | STANDARD  | REQUIREMENT   |
| Receive Patient   | <ul style="list-style-type: none"> <li>• Register patient particulars in record book / Operation theatre (OT) book.</li> </ul>  | Malaysian Patient Safety Goal 2.0   | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Record book / census</li> </ul>   |
| Assess / Verify Patient / Correct Site / Allergy Status | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Verify correct site.</li> <li>• Verify correct procedure.</li> <li>• Verify allergy status</li> <li>• Ensure written consent has been taken.</li> </ul>   | <p><i>Manual Arahan Kerja</i></p> <p>Safe Surgery Safe Life (SSSL)</p> <p>Malaysian Patient Safety Goal 2.0</p> | <ul style="list-style-type: none"> <li>• Consent form</li> <li>• Safe Surgery Safe Life (SSSL) Form</li> <li>• OT list</li> </ul>   |
| Prepare Instruments / Equipment / Medication / Implant  | <ul style="list-style-type: none"> <li>• Make sure bone saw machine (for lateral orbitotomy) works perfectly.</li> <li>• Make sure suction and cautery machine work perfectly.</li> <li>• Prepare complete &amp; sterile orbital set.</li> <li>• Prepare supplementary instruments</li> <li>• Prepare solutions.</li> <li>• Prepare disposable item.</li> </ul> |   | <ul style="list-style-type: none"> <li>• Bone saw machine (if necessary)</li> <li>• Suction and bipolar cautery machine</li> <li>• Orbitotomy Set</li> <li>• <b>*Refer Appendix 11</b></li> <li>• Supplementary instruments               <ol style="list-style-type: none"> <li>i. Sterile ruler</li> <li>ii. Sterile marker</li> <li>iii. Illuminated eye loupe</li> <li>iv. Cautery cable and forceps</li> </ol> </li> <li>• Solutions               <ol style="list-style-type: none"> <li>i. Antiseptic</li> <li>ii. Sterile water</li> <li>iii. Formaldehyde</li> </ol> </li> <li>• Disposable item               <ol style="list-style-type: none"> <li>i. Eye drape</li> <li>ii. Gauze</li> <li>iii. Cotton bud</li> <li>iv. Ribbon gauze</li> <li>v. Bone wax (if available)</li> <li>vi. 6-0 non-absorbable suture</li> </ol> </li> </ul> |

|                      |  |   |   |
|----------------------|--|---|---|
|                      | <ul style="list-style-type: none"> <li>• Verify correct medication.</li> <li>• Check medication expiry date.</li> </ul> <p><u>Medication</u><br/><u>Preparation Step</u><br/>1) Local anaesthesia<br/>Bupivacaine %<br/>Adrenaline 1 in 200,000<br/># Administer intravenous dexamethasone stat dose during intraoperation (to liaise with anaesthetist)</p> <ul style="list-style-type: none"> <li>• Verify correct implant.</li> <li>• Check implant expiry date.</li> </ul> |   | <ul style="list-style-type: none"> <li>vii. 6-0 <math>\frac{1}{4}</math> or 6-0 <math>\frac{3}{8}</math> absorbable suture</li> <li>viii. 8-0 absorbable suture</li> <li>ix. 4-0 non-absorbable suture</li> <li>• Medication <ul style="list-style-type: none"> <li>i. Bupivacaine &amp; Adrenaline injection</li> <li>ii. Ointment antibiotic</li> </ul> </li> <li>• Implant <ul style="list-style-type: none"> <li>i. Orbital mesh or medpor implant (for orbital floor repair).</li> </ul> </li> </ul> |
| Prepare Patient      | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Inform the patient about the procedure.</li> <li>• Positioning patient in supine position</li> <li>• Clean and drape patient's eye with aseptic technique</li> </ul>   | Malaysian Patient Safety Goal 2.0<br><i>Manual Arahan Kerja</i> | <ul style="list-style-type: none"> <li>• Patient record</li> <li>• Antiseptic</li> <li>• Eye Drape</li> </ul>   |
| Assist the Procedure | <ul style="list-style-type: none"> <li>• Hand washing, gowning and gloving using aseptic technique and proper sterile attire.</li> </ul>   |   | <ul style="list-style-type: none"> <li>• OT gown</li> <li>• Sterile glove</li> </ul>  |

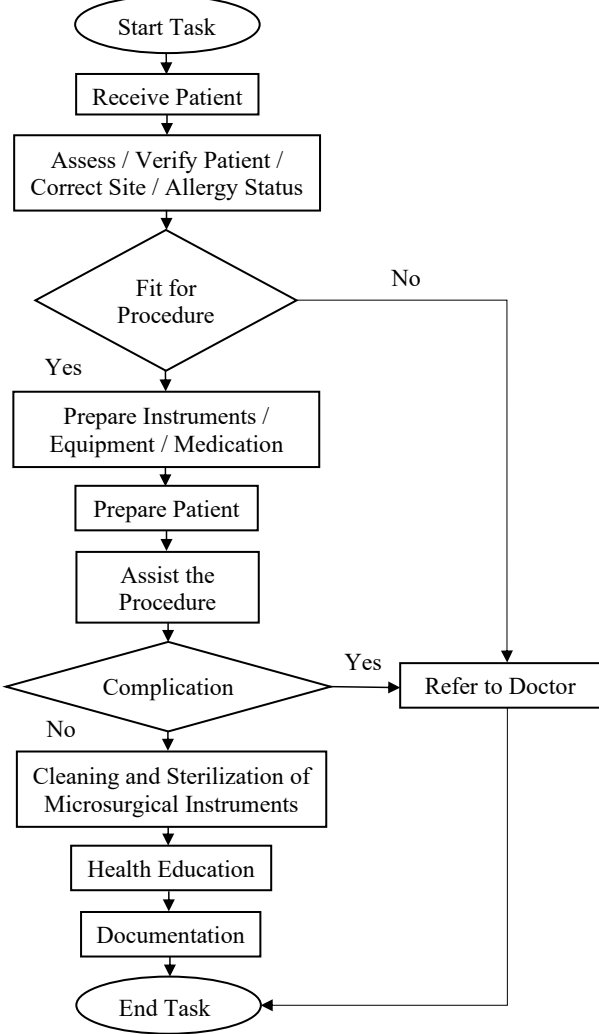
|  |  |  |   |
|--|--|--|---|
|  | <ul style="list-style-type: none"> <li>• Assist doctor and wait for the next instructions</li> </ul> <p><u>Steps (Perform by doctor)</u></p> <ol style="list-style-type: none"> <li>1) Administration of Local anaesthesia</li> <li>2) Incision.</li> <li>3) Tissue dissection</li> <li>4) Procedure performs accordingly       <ol style="list-style-type: none"> <li>i. Avoid sharp instrument to avoid injury on orbital structure</li> <li>ii. Avoid cotton bud upon orbital dissection to prevent orbital inflammation and infection</li> <li>iii. Osteotomy (orbital decompression)</li> <li>iv. Excisional biopsy (for orbital tumour)</li> <li>v. Release of tissue entrapment (for orbital fracture)</li> <li>vi. Drainage of abscess</li> </ol> </li> <li>5) Placement of implant in orbital reconstruction surgery</li> <li>6) Wound closure in layers       <ol style="list-style-type: none"> <li>i. 8-0 absorbable suture (for conjunctiva)</li> <li>ii. 6-0 absorbable suture (muscle and soft tissue)</li> </ol> </li> </ol> |  | <p><u>Steps (Hand over by AMO)</u></p> <ol style="list-style-type: none"> <li>1) Local anaesthesia</li> <li>2) Bard Parker handle with blade size 15</li> <li>3) Tooth forceps and Wescott scissors</li> <li>4) Instruments       <ol style="list-style-type: none"> <li>i. Freer and Steven scissor</li> <li>ii. Orbital retractor (malleable) to the surgeon assistant</li> <li>iii. Bone saw/ Chisel and Malleate for osteotomy surgery</li> </ol> </li> <li>5) Implant pre-soaked with antibiotic (if necessary)</li> <li>6) Sutures       <ol style="list-style-type: none"> <li>i. 8-0 absorbable suture</li> <li>ii. 6-0 absorbable suture</li> <li>iii. 6-0 or 7-0 non-absorbable suture</li> </ol> </li> </ol> |
|--|--|--|---|

|  |   |   |   |
|--|---|---|---|
|  | iii. 6-0 or 7.0 non-absorbable suture (skin)<br>7) Antibiotic   |   | 7) Ointment antibiotic  |
| Cleaning And Sterilization of Microsurgery Instruments | Refer to Cleaning and sterilization of microsurgery instruments guideline.  | Policies and Procedure on Infection Prevention and control, MOH, 2018 (3 <sup>rd</sup> edition) | Refer to Cleaning and sterilization of microsurgery instruments guideline.                        |
| Health Education                                       | <ul style="list-style-type: none"> <li>• Post-operative care               <ol style="list-style-type: none"> <li>i. Cold compression</li> <li>ii. Observe for retrobulbar hemorrhage</li> <li>iii. STO 1@2 weeks</li> </ol> </li> <li>• Observe side effects / complications</li> <li>• Compliance to medication</li> <li>• Emphasize on follow up compliance</li> </ul> |   |   |
| Documentation  | • Record procedure  | Safe Surgery Safe Life (SSSL)   | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> <li>• SSSL Form</li> </ul> |

## REFERENCE

- Surgery: Transconjunctival Orbitotomy: Tips and Tricks.* (2023, January 4). Cybersight. <https://cybersight.org/portfolio/surgery-transconjunctival-orbitotomy-tips-and-tricks/>
- Yoshinori, H., Kentaro, H., Naokatu, S., & Seiichiro, M. (2016). Superolateral Orbitotomy for Intraorbital Tumors: Comparison with the Conventional Approach. *Journal of Neurological Surgery Part B: Skull Base*, 77(06), 473–478.
- Yoon, M., Campbell, A., & Grob, S. (2015). Novel surgical approaches to the orbit. *Middle East African Journal of Ophthalmology*, 22(4), 435.
- Yen, M. T., Homer, N., & Rana, H. S. (2023, October 15). *Surgical approaches to the orbit.* EyeWiki. [https://eyewiki.aao.org/Surgical\\_Approaches\\_to\\_the\\_Orbit](https://eyewiki.aao.org/Surgical_Approaches_to_the_Orbit)

**STRABISMUS SURGERY**

|                           |  |
|---------------------------|--|
| <b>INTRODUCTION</b>       | Strabismus surgery (eye muscle surgery) is designed to loosen or tighten the eye muscles, depending on the affliction, which realigns the eyes into the correct position.  |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be assisted by a privileged Assistant Medical Officer (AMO).</li> <li>• All patient indicated for the procedure.</li> </ul>  |
| <b>SPECIFIC OBJECTIVE</b> | Correct the misalignment of the eye  |
| <b>WORKFLOW</b>           |  <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive Patient]     Receive --&gt; Assess[Assess / Verify Patient /<br/>Correct Site / Allergy Status]     Assess --&gt; Fit{Fit for<br/>Procedure}     Fit -- No --&gt; Refer[Refer to Doctor]     Fit -- Yes --&gt; PrepareInst[Prepare Instruments /<br/>Equipment / Medication]     PrepareInst --&gt; PreparePat[Prepare Patient]     PreparePat --&gt; Assist[Assist the<br/>Procedure]     Assist --&gt; Comp{Complication}     Comp -- Yes --&gt; Refer     Comp -- No --&gt; Clean[Cleaning and Sterilization of<br/>Microsurgical Instruments]     Clean --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End   </pre> <p>The workflow diagram for Strabismus Surgery is as follows:</p> <ol style="list-style-type: none"> <li>Start Task</li> <li>Receive Patient</li> <li>Assess / Verify Patient / Correct Site / Allergy Status</li> <li>Decision: Fit for Procedure       <ul style="list-style-type: none"> <li>If No: Refer to Doctor</li> <li>If Yes: Proceed to Prepare Instruments / Equipment / Medication</li> </ul> </li> <li>Prepare Instruments / Equipment / Medication</li> <li>Prepare Patient</li> <li>Assist the Procedure</li> <li>Decision: Complication       <ul style="list-style-type: none"> <li>If Yes: Refer to Doctor</li> <li>If No: Proceed to Cleaning and Sterilization of Microsurgical Instruments</li> </ul> </li> <li>Cleaning and Sterilization of Microsurgical Instruments</li> <li>Health Education</li> <li>Documentation</li> <li>End Task</li> </ol> |

| WORK INSTRUCTION  |   |   |  |
|---|---|---|--|
| ACTIVITY  | WORK PROCESS  | STANDARD  | REQUIREMENT  |
| Receive Patient   | <ul style="list-style-type: none"> <li>Register patient particulars in patient's record book.</li> </ul>  | Malaysian Patient Safety Goal 2.0   | <ul style="list-style-type: none"> <li>Patient appointment card / record</li> <li>Record book</li> </ul>   |
| Assess / Verify Patient / Correct Site / Allergy Status | <ul style="list-style-type: none"> <li>Verify correct patient</li> <li>Verify correct site</li> <li>Verify correct procedure</li> <li>Verify allergy status</li> <li>Ensure written consent has been taken</li> </ul>   | Manual Arahan Kerja<br><br>Safe Surgery Safe Life (SSSL)<br><br>Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>Safe Surgery Safe Life (SSSL) Form</li> <li>Operation Theatre (OT) list</li> <li>Consent form</li> </ul>  |
| Prepare Instruments / Equipment / Medication            | <ul style="list-style-type: none"> <li>Make sure cautery machine works perfectly</li> <li>Prepare complete &amp; sterile strabismus set</li> <li>Prepare solutions</li> <li>Prepare disposable item</li> <li>Verify correct medication</li> <li>Check medication expiry date</li> <li>Check implant expiry date</li> </ul> <p><u>Medication Preparation Step</u></p> <p>1) Prepare local anesthesia on 3cc syringe attach with sub tenon needle</p> |   | <ul style="list-style-type: none"> <li>Cautery machine.</li> <li>Dressing Set</li> <li>Strabismus set</li> <li><b>*Refer Appendix 12</b></li> <li>Solutions                             <ul style="list-style-type: none"> <li>Antiseptic</li> </ul> </li> <li>Disposable item                             <ul style="list-style-type: none"> <li>Cotton bud</li> </ul> </li> <li>Medication                             <ul style="list-style-type: none"> <li>Local Anesthesia</li> <li>Topical Antibiotics</li> </ul> </li> </ul> |
| Prepare Patient   | <ul style="list-style-type: none"> <li>Inform the patient about the procedure</li> <li>Position patient in supine on the couch</li> </ul>   | Malaysian Patient Safety Goal 2.0<br><br>Manual Arahan Kerja                                      | <ul style="list-style-type: none"> <li>Patient record</li> <li>Eye Drape</li> </ul>  |

|                      |   |  |   |
|----------------------|---|--|---|
|                      | <ul style="list-style-type: none"> <li>• Clean and drape patient's eye with aseptic technique</li> </ul>  |  |   |
| Assist the Procedure | <ul style="list-style-type: none"> <li>• Hand washing, gowning and gloving using aseptic technique and proper sterile attire</li> <li>• Assist doctor and wait for the next instructions</li> </ul> <p><u>Steps (Perform by doctor)</u></p> <ol style="list-style-type: none"> <li>1) Episcleral stay suture near the limbus (at 6 and 12 o'clock) to anchor the eye</li> <li>2) Fornix-based, winged limbal peritomy – down to bare sclera</li> <li>3) Blunt dissection to clear Tenon's capsule and intermuscular septum to reach bare sclera on the side of the muscle and repeat on the opposite side of muscle insertion</li> <li>4) Muscle isolation and exposure</li> <li>5) Whip lock muscle at its insertion (needles kept on suture)</li> </ol> |  | <ul style="list-style-type: none"> <li>• Operation Theater gown</li> <li>• Sterile glove</li> </ul> <p><u>Steps (Hand over by AMO)</u></p> <ol style="list-style-type: none"> <li>1) Item       <ol style="list-style-type: none"> <li>i. Silk 4/0 suture</li> <li>ii. Conjunctiva forceps</li> <li>iii. Mosquito artery forceps</li> </ol> </li> <li>2) Westcott scissors</li> <li>3) Item       <ol style="list-style-type: none"> <li>i. Westcott scissors</li> <li>ii. Non toothed conjunctival forceps</li> </ol> </li> <li>4) Muscle hook</li> <li>5) Item       <ol style="list-style-type: none"> <li>i. Westcott scissors</li> </ol> </li> </ol> |

|  |  |  |   |
|--|--|--|---|
|  | <p>6) Detachment of muscle at its insertion</p> <p>7) Cauterisation of remaining muscle stump</p> <p>8) Measurement of length of recession and position marked with calliper tip</p> <p>9) Resection.<br/>Reattach muscle to sclera at new position using the two ends of the previously placed 6/0 absorbable suture</p> <p>10) Reposition conjunctiva<br/>[Wetting eye may help differentiate conjunctiva (pink) from Tenon's capsule (white)]</p> <p>11) Remove stay sutures</p> <p>12) Subconjunctival injection<br/>a. Sharps and swabs count</p> |  | <p>ii. Non toothed conjunctival forceps</p> <p>iii. 6/0 absorbable suture</p> <p>iv. Needle holder</p> <p>6) Item<br/>i. Muscle hook<br/>ii. Wescott tenotomy scissors<br/>iii. Muscle scissors</p> <p>7) Cautery and forceps</p> <p>8) Item<br/>i. Castroviejo callipers<br/>ii. Sterile marker pen</p> <p>9) Item<br/>i. 6/0 absorbable suture<br/>ii. St Martin's Forceps</p> <p>10) Item<br/>i. Non-toothed conjunctiva forceps<br/>ii. Suture 8/0 absorbable</p> <p>11) Balanced Salt Solution</p> <p>12) Blunt tip Scissors</p> <p>13) Item</p> |
|--|--|--|---|

|  |   |   |   |  |
|--|---|---|---|--|
|  |   | b. Apply antibiotic and steroid ointment  |   | i. Toothed Conjunctival Forceps<br>ii. Local anaesthesia<br>iii. Ointment Antibiotic |
| Cleaning And Sterilization of Microsurgery Instruments | Refer to Cleaning and sterilization of microsurgery instruments guideline   | Policies and Procedure on Infection Prevention and control, MOH, 2018 (3 <sup>rd</sup> edition) | Refer to Cleaning and sterilization of microsurgery instruments guideline.                        |  |
| Health Education                                       | <ul style="list-style-type: none"> <li>• Post-operative care             <ol style="list-style-type: none"> <li>i. Do not rub the eyes</li> <li>ii. Drop antibiotic and topical steroids to prevent infection and reduce inflammation</li> <li>iii. Do not leave the operated eye wet or exposed to water to avoid any infection</li> <li>iv. Observe the eye alignment to see the effectiveness of the surgery</li> </ol> </li> <li>• Observe side effects such as bleeding</li> <li>• Taking medication</li> <li>• Advice patient to go to eye clinic during office hours or emergency department immediately after office hours if any complication occurs</li> <li>• Emphasize on follow up compliance</li> </ul> |   |   |  |
| Documentation  | <ul style="list-style-type: none"> <li>• Record procedure</li> <li>• Document any error</li> </ul>  | Safe Surgery Safe Life (SSSL)   | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> <li>• SSSL Form</li> </ul> |  |

**REFERENCE**

Hoyt, C. S., & Taylor, D. (2013). *Paediatric ophthalmology and strabismus*. Saunders/Elsevier.

Mayo Foundation for Medical Education and Research. (2019). *Paediatrics*. Mayo Clinic. <https://www.mayoclinic.org/medical-professionals/pediatrics/news/strabismus-the-importance-of-timely-specialized-care/mqc-20452790>

*Strabismus surgery for misaligned eyes, crossed eyes, or wall eyes*. Fort Worth Eye Associates. (2021, October 1). <https://www.ranelle.com/strabismus-misaligned-eyes-crossed-eyes-wall-eyes/>

**AUGMENTED TRABECULECTOMY**

|                           |   |
|---------------------------|---|
| <b>INTRODUCTION</b>       | Trabeculectomy is a glaucoma surgery performed to create a new pathway for fluid to flow from the anterior chamber to the subconjunctival space.  |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be assisted by a privileged Assistant Medical Officer (AMO).</li> <li>• All patient with glaucoma/ hypertension with uncontrolled IOP.</li> </ul>   |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• To treat uncontrolled intra ocular pressure (IOP).</li> </ul>  |
| <b>WORKFLOW</b>           | <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive Patient]     Receive --&gt; Assess[Assess / Verify Patient /<br/>Correct Site / Allergy Status]     Assess --&gt; Fit{Fit for<br/>Procedure}     Fit -- No --&gt; Refer[Refer to Doctor]     Fit -- Yes --&gt; Prepare[Prepare Instruments /<br/>Equipment / Medication]     Prepare --&gt; Prep[Prepare Patient]     Prep --&gt; Assist[Assist the<br/>Procedure]     Assist --&gt; Comp{Complication}     Comp -- Yes --&gt; Refer     Comp -- No --&gt; Clean[Cleaning and Sterilization of<br/>Microsurgical Instruments]     Clean --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End   </pre> |

**WORK INSTRUCTION**

| <b>ACTIVITY</b>   | <b>WORK PROCESS</b>  | <b>STANDARD</b>   | <b>REQUIREMENT</b>  |
|---|--|---|---|
| Receive Patient   | <ul style="list-style-type: none"> <li>Register patient particulars in patient's record book</li> </ul>  | Malaysian Patient Safety Goal 2.0   | <ul style="list-style-type: none"> <li>Patient appointment card / record</li> <li>Record book / census</li> </ul>   |
| Assess / Verify Patient / Correct Site / Allergy Status | <ul style="list-style-type: none"> <li>Verify correct patient.</li> <li>Verify correct site.</li> <li>Verify correct procedure.</li> <li>Verify allergy status.</li> <li>Ensure written consent has been taken.</li> </ul> | <p><i>Manual Arahan Kerja</i></p> <p>Safe Surgery Safe Life (SSSL)</p> <p>Malaysian Patient Safety Goal 2.0</p> | <ul style="list-style-type: none"> <li>Safe Surgery Safe Life (SSSL) Form</li> <li>Operation theatre (OT) list</li> <li>Signed consent form</li> </ul>  |
| Prepare Instruments / Equipment                         | <ul style="list-style-type: none"> <li>Prepare complete &amp; sterile Trabeculectomy set</li> <li>Prepare supplementary instruments</li> <li>Prepare solutions</li> <li>Prepare disposable item</li> </ul>                 |   | <ul style="list-style-type: none"> <li>Trabeculectomy set <b>*Refer Appendix 13</b></li> <li>Supplementary instruments:               <ol style="list-style-type: none"> <li>Crescent knife</li> <li>15<sup>0</sup> blade</li> <li>Syringe 3ml x 2</li> <li>Syringe 5 ml x 2</li> <li>9/0/ nylon Suture and 10/0 nylon suture</li> <li>8/0 absorbable suture</li> <li>Sponge spear</li> <li>Cytotoxic preparation set</li> <li>Syringe 20 ml x 2</li> </ol> </li> <li>Solutions:               <ol style="list-style-type: none"> <li>Antiseptic</li> <li>Normal saline</li> <li>Balance salt solution</li> </ol> </li> <li>Disposable item:               <ol style="list-style-type: none"> <li>Eye drape</li> <li>Syringe</li> <li>Sterile gauze and cotton bud</li> <li>Sterile surgical glove</li> </ol> </li> </ul> |

|                      |   |  |  |
|----------------------|---|--|--|
|                      | <ul style="list-style-type: none"> <li>• Medication</li> </ul>  |  | <ul style="list-style-type: none"> <li>v. Needle</li> <li>vi. Dressing set</li> <li>vii. Eye pad</li> <li>• Medication:             <ul style="list-style-type: none"> <li>i. Mitomycin c</li> <li>ii. Local anaesthesia</li> <li>iii. Topical anaesthesia</li> <li>iv. sub conjunctiva Antibiotics</li> <li>v. Ointment antibiotic</li> </ul> </li> </ul> |
| Prepare Patient      | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Inform the patient about the procedure.</li> <li>• Position patient in supine on the OT table</li> <li>• Clean and drape patient's eye with aseptic technique</li> </ul>  | <p>Malaysian Patient Safety Goal 2.0</p> <p><i>Manual Arahan Kerja</i></p> | <ul style="list-style-type: none"> <li>• Patient record</li> </ul>   |
| Assist the Procedure | <ul style="list-style-type: none"> <li>• Hand washing, gowning, and gloving using aseptic technique and proper sterile attire.</li> <li>• Drape patient after cleaning the correct eye</li> </ul> <p><u>Steps (Perform by doctor)</u></p> <ol style="list-style-type: none"> <li>1) Clean the eye including the eyelids with antiseptic and drape the eye</li> <li>2) Local anaesthesia is infiltrated to the intended area</li> <li>3) Perform limbal traction suture</li> </ol> |  | <ul style="list-style-type: none"> <li>• OT gown</li> <li>• Sterile glove</li> <li>• Eye Drape</li> </ul> <p><u>Steps (Hand over by AMO)</u></p> <ol style="list-style-type: none"> <li>1) Antiseptic and eye drape</li> <li>2) local anaesthesia mixture<br/>Lignocaine HCL 2% and Bupivacaine HCL 0.5%</li> <li>3) 7/0 absorbable suture</li> </ol>      |

|  |   |  |   |
|--|---|--|---|
|  | <p>4) The conjunctiva is dissected with the limbal base or fornix based to allow access to the proposal drainage site</p> <p>5) Hemostasis is secure with cautery</p> <p>6) A small sclera flap is fashioned (rectangular / triangular), a partial thickness sclera flap is made measure 4mm x 4mm</p> <p>7) Antimetabolites is used example 5FU (fluorouracil / mitomycin C) Prepare separate gallipots with 20ml syringe and normal saline to wash</p> <p>8) Perform a paracentesis and suture</p> <p>a) To enable the surgeon to control the anterior chamber</p> <p>b) Allow instillation of balance salt solution (BSS) and intra operative testing of the patency of the filtration site</p> <p>9) Perform sclerotomy using puncher or/ blade</p> |  | <p>4) Westcott and conjunctiva</p> <p>5) Cautery cable</p> <p>6) 15<sup>0</sup> blade, caliper and Hoskin forceps</p> <p>7) Circulating nurse is prepare new sets of gallipots and 20 ml syringe for the anti-metabolites to avoid contamination to main sets of instruments</p> <p>8) 15<sup>0</sup> blade and Hoskin forceps</p> <p>9) Puncher Khaw's / Kelly's</p> |
|--|---|--|---|

|  |   |   |  |
|--|---|---|--|
|  | <p>10) Perform an iridectomy to reduce the risk of iris occluding the sclerostomy especially in phakic eyes, and to prevent papillary block</p> <p>11) Suture sclera flap with 9/0 nylon suture or 10/0 nylon suture</p> <p>12) Suture conjunctival flap with 10/0 nylon suture</p> <p>13) Test patency by injecting Balance salt solution (BSS) through the paracentesis</p> <p>14) Subconjunctival Injection</p> <p>15) Apply pad</p> |   | <p>10) Iris forceps and Vanna's scissor</p> <p>11) 9/0 nylon suture or 10/0 nylon suture</p> <p>12) 10/0 nylon suture</p> <p>13) Balance salt solution (BSS)</p> <p>14) Medication:</p> <ul style="list-style-type: none"> <li>• Dexamethasone 0.5ml</li> <li>• Lignocaine 0.5ml</li> <li>• Cefuroxime 0.5ml</li> </ul> <p>15) Eye pad</p> |
| Cleaning And Sterilization of Microsurgery Instruments | Refer to Cleaning and sterilization of microsurgery instruments guideline.  | Policies and Procedure on Infection Prevention and control, MOH, 2018 (3 <sup>rd</sup> edition) | Refer to Cleaning and sterilization of microsurgery instruments guideline.   |
| Health Education                                       | <p>Post-operative care</p> <ul style="list-style-type: none"> <li>• Observed patient for any abnormalities <ul style="list-style-type: none"> <li>i. Lid swelling</li> <li>ii. Bleeding at operation site</li> <li>iii. Severe eye pain</li> </ul> </li> <li>• Observe side effects / complications</li> <li>• Medication compliance</li> <li>• Emphasize on</li> </ul>   |   |  |

|               |  |                               |   |
|---------------|--|-------------------------------|---|
|               | follow up compliance   |                               |   |
| Documentation | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul> | Safe Surgery Safe Life (SSSL) | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> <li>• SSSL Form</li> </ul> |

## REFERENCE

Feldman, R. M., & Bell, N. P. (2013). *Complications of glaucoma surgery*. Oxford University Press.

Kalarn, S., Le, T., & Rhee, D. J. (2021). The role of trabeculectomy in the era of minimally invasive glaucoma surgery. *Current Opinion in Ophthalmology*, 33(2), 112–118.

Weinreb, R. N., P. Ramulu, F. Topouzis, Park, K. H., Mansouri, K., & Lerner, S. F. (2019). *Glaucoma Surgery*. Kugler Publications.

| <b>VITREOUS BIOPSY</b>    |   |
|---------------------------|---|
| <b>INTRODUCTION</b>       | Vitreous biopsy is a procedure to obtain vitreous sample. It can be performed either by needle aspiration or vitrectomy.  |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>The procedure will be assisted by a privileged Assistant Medical Officer (AMO).</li> <li>All patient requiring vitreous sampling.</li> </ul>   |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>To establish causative organism in endophthalmitis</li> <li>To diagnose / exclude intraocular malignancy</li> <li>To diagnose other intraocular infection such as tuberculosis and CMV retinitis</li> <li>To diagnose intraocular inflammation</li> </ul>  |
| <b>WORKFLOW</b>           | <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive Patient]     Receive --&gt; Assess[Assess / Verify Patient /<br/>Correct Site / Allergy Status]     Assess --&gt; Fit{Fit for<br/>Procedure}     Fit -- No --&gt; Refer[Refer to Doctor]     Fit -- Yes --&gt; PrepareInst[Prepare Instruments /<br/>Equipment / Medication]     PrepareInst --&gt; PreparePat[Prepare Patient]     PreparePat --&gt; Assist[Assist the<br/>Procedure]     Assist --&gt; Comp{Complication}     Comp -- Yes --&gt; Refer     Comp -- No --&gt; Clean[Cleaning and Sterilization of<br/>Microsurgical Instruments]     Clean --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End   </pre> |

| WORK INSTRUCTION  |   |   |  |
|---|---|---|--|
| ACTIVITY  | WORK PROCESS  | STANDARD  | REQUIREMENT  |
| Receive Patient   | <ul style="list-style-type: none"> <li>• Register patient particulars in patient's record book</li> </ul>   | Malaysian Patient Safety Goal 2.0   | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Record book / census</li> </ul>  |
| Assess / Verify Patient / Correct Site / Allergy Status | <ul style="list-style-type: none"> <li>• Verify correct patient</li> <li>• Verify correct site</li> <li>• Verify correct procedure</li> <li>• Verify allergy status</li> <li>• Ensure written consent has been taken</li> </ul> | <p><i>Manual Arahan Kerja</i></p> <p>Safe Surgery Safe Life (SSSL)</p> <p>Malaysian Patient Safety Goal 2.0</p> | <ul style="list-style-type: none"> <li>• Safe Surgery Safe Life (SSSL) Form</li> <li>• Operation theatre (OT) list</li> <li>• Signed consent form</li> </ul>   |
| Prepare Instruments / Equipment                         | <ul style="list-style-type: none"> <li>• Vitrectomy machine</li> <li>• Prepare instruments</li> <li>• Prepare solutions</li> <li>• Prepare disposable item</li> <li>• Medication</li> <li>• Culture media</li> </ul>            |   | <ul style="list-style-type: none"> <li>• Make sure Vitrectomy machine works perfectly</li> <li>• Vitrectomy set</li> <li>• <b>*Refer Appendix 14</b></li> <li>• Solutions:             <ol style="list-style-type: none"> <li>i. Povidone iodine</li> <li>ii. Normal saline</li> </ol> </li> <li>• Disposable item:             <ol style="list-style-type: none"> <li>i. Eye drape</li> <li>ii. Syringes</li> <li>iii. Needles</li> <li>iv. 3-way connection</li> <li>v. Sterile gauze and cotton bud</li> <li>vi. Sterile surgical glove</li> <li>vii. Eye pad</li> </ol> </li> <li>• Medication:             <ol style="list-style-type: none"> <li>i. Topical anaesthesia</li> <li>ii. Ropivacaine HCL 2mg/ml</li> <li>iii. Topical Antibiotics</li> </ol> </li> <li>• Agar plates and Culture &amp; Sensitivity bottle</li> </ul> |
| Prepare Patient   | <ul style="list-style-type: none"> <li>• Inform the patient about the procedure</li> <li>• Position patient in supine</li> </ul>  | <p>Malaysian Patient Safety Goal 2.0</p> <p><i>Manual Arahan Kerja</i></p>                                      | <ul style="list-style-type: none"> <li>• Patient record</li> <li>• Dilating eye drop</li> <li>• Antiseptic solution</li> </ul>   |

|                      |   |  |  |
|----------------------|---|--|--|
|                      | <ul style="list-style-type: none"> <li>• Clean and drape patient's eye with aseptic technique</li> </ul>  |  | <ul style="list-style-type: none"> <li>• Eye Drape</li> </ul>  |
| Assist the Procedure | <ul style="list-style-type: none"> <li>• Hand washing, gowning, and gloving using aseptic technique and proper sterile attire</li> <li>• Drape patient after cleaning the correct eye</li> </ul> <p><u>Steps (Perform by doctor)</u></p> <ol style="list-style-type: none"> <li>1. Make 3 ports/ sclerotomies for infusion, light pipe and vitreous cutter/ Occutome</li> <li>2. Use 23, 25G or 27G trocar used in sclerotomies</li> <li>3. Bring in Non-Contact Panoramic Viewing System (EIBOS/ BIOM/ Resight)</li> <li>4. Start perform vitrectomy without turning on infusion to collect specimen</li> <li>5. Once collect the specimen, start to complete vitrectomy while infusion is turned on</li> <li>6. Once completed the vitrectomy, suture the sclerotomies wound</li> <li>7. Prepare subconjunctival injection</li> </ol> |  | <ul style="list-style-type: none"> <li>• OT gown</li> <li>• Sterile glove</li> <li>• Eye drape</li> </ul> <p><u>Steps (Hand over by AMO)</u></p> <ol style="list-style-type: none"> <li>1. Infusion port followed by light pipe and vitrectomy cutter</li> <li>2. Trocar 23, 25G or 27G</li> <li>3. Non-Contact Panoramic Viewing System (EIBOS/ BIOM/ Resight) into position and off OT light</li> <li>4. Fix 3-way connector to cutter and attach 5cc syringe to collect specimen</li> <li>5. Start withdraw under surgeon's instruction</li> <li>6. 7/0 absorbable suture with needle holder</li> <li>7. Medication: <ul style="list-style-type: none"> <li>• Dexamethasone 4mg/ml</li> </ul> </li> </ol> |

|  |   |   |   |
|--|---|---|---|
|  | medications in ratio 1:1:1<br>8. Apply eye pad  |   | <ul style="list-style-type: none"> <li>• Gentamicin 80mg/2ml</li> <li>• Lignocaine HCL 20mg/ml (optional)</li> </ul> 8. Eye pad |
| Cleaning And Sterilization of Microsurgery Instruments | Refer to Cleaning and sterilization of microsurgery instruments guideline.  | Policies and Procedure on Infection Prevention and control, MOH, 2018 (3 <sup>rd</sup> edition) | Refer to Cleaning and sterilization of microsurgery instruments guideline   |
| Health Education                                       | Post-operative care <ul style="list-style-type: none"> <li>• Positioning as indicated and cleanliness of surgical site</li> <li>• Observe side effects / complications</li> <li>• Medication compliance</li> <li>• Emphasize on follow up compliance</li> </ul> |   |   |
| Documentation  | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>  | Safe Surgery Safe Life (SSSL)   | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> <li>• SSSL Form</li> </ul>                               |

## REFERENCE

- Midena, E., Frizziero, L., Midena, G., & Pilotto, E. (2021). Intraocular fluid biomarkers (liquid biopsy) in human diabetic retinopathy. *Graefe's Archive for Clinical and Experimental Ophthalmology*, 259(12), 3549–3560
- Peyman, G. A., & Sanders, D. R. (1975). *Advances in Uveal Surgery, Vitreous Surgery, and the Treatment of Endophthalmitis*. McGraw-Hill/Appleton & Lange.
- Zhao, M., Yu, Y.-J., & Liu, W. (2019). *Vitreous Biopsy Under Air: Technique, Complications, and Volume Outcomes*. 50(6), 365–370.

| <b>CRYORETINOPEXY</b>     |   |
|---------------------------|---|
| <b>INTRODUCTION</b>       | Cryoretinopexy is a non-invasive procedure that involves the placement of a very cold probe on the sclera to transmit treatment to the underlying retina inside the eye. This treatment causes focal adhesion of the retina   |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be assisted by a privileged Assistant Medical Officer (AMO).</li> <li>• All patient with retina tear/ retinal detachment/ ischemic retinopathy</li> </ul>   |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• For anterior retina tear.</li> <li>• To treat retinal detachment</li> <li>• Treat some of intra ocular tumour.</li> </ul>  |
| <b>WORKFLOW</b>           | <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive Patient]     Receive --&gt; Assess[Assess / Verify Patient /<br/>Correct Site / Allergy Status]     Assess --&gt; Fit{Fit for<br/>Procedure}     Fit -- No --&gt; Refer[Refer to Doctor]     Fit -- Yes --&gt; PrepareInst[Prepare Instruments /<br/>Equipment / Medication]     PrepareInst --&gt; PreparePat[Prepare Patient]     PreparePat --&gt; Assist[Assist the<br/>Procedure]     Assist --&gt; Comp{Complication}     Comp -- Yes --&gt; Refer     Comp -- No --&gt; Clean[Cleaning and Sterilization of<br/>Microsurgical Instruments]     Clean --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End   </pre> |

| <b>WORK INSTRUCTION</b>                                 |  |  |  |
|---|--|--|--|
| <b>ACTIVITY</b>   | <b>WORK PROCESS</b>  | <b>STANDARD</b>  | <b>REQUIREMENT</b>   |
| Receive Patient   | <ul style="list-style-type: none"> <li>• Register patient particulars in patient's record book</li> </ul>  | Malaysian Patient Safety Goal 2.0  | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Record book / census</li> </ul>  |
| Assess / Verify Patient / Correct Site / Allergy Status | <ul style="list-style-type: none"> <li>• Verify correct patient</li> <li>• Verify correct site</li> <li>• Verify correct procedure</li> <li>• Ensure written consent has been taken</li> </ul>                                 | <i>Manual Arahan Kerja</i><br><br>Safe Surgery Safe Life (SSSL)<br><br>Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Safe Surgery Safe Life (SSSL) Form</li> <li>• Operation theatre (OT) list</li> <li>• Signed consent form</li> </ul>   |
| Prepare Instruments / Equipment                         | <ul style="list-style-type: none"> <li>• Make sure Cryo machine works perfectly</li> <li>• Prepare supplementary instruments</li> <li>• Prepare solutions</li> <li>• Prepare disposable item.</li> <li>• Medication</li> </ul> |  | <ul style="list-style-type: none"> <li>• Cryo machine and probe function</li> <li>• Supplementary instruments:               <ol style="list-style-type: none"> <li>i. Indental</li> <li>ii. Marking indental</li> <li>iii. Surgical skin marker pen</li> <li>iv. Eye speculum</li> </ol> </li> <li>• Solutions:               <ol style="list-style-type: none"> <li>i. Antiseptic</li> <li>ii. Normal saline</li> </ol> </li> <li>• Disposable item:               <ol style="list-style-type: none"> <li>i. Eye drape</li> <li>ii. Syringe</li> <li>iii. Sterile gauze and cotton bud</li> <li>iv. Sterile surgical glove</li> <li>v. Needles</li> <li>vi. Eye pad</li> </ol> </li> <li>• Medication:               <ol style="list-style-type: none"> <li>i. Topical anaesthesia</li> <li>ii. Topical Antibiotics</li> </ol> </li> </ul> |
| Prepare Patient   | <ul style="list-style-type: none"> <li>• Inform the patient about the procedure</li> <li>• Position patient in supine on the OT table</li> </ul>   | Malaysian Patient Safety Goal 2.0<br><br><i>Manual Arahan Kerja</i>                                      | <ul style="list-style-type: none"> <li>• Patient record</li> <li>• Dilating eye drop</li> <li>• Eye Drape</li> <li>• Instil Topical anaesthesia</li> </ul>   |

|  |   |   |   |
|--|---|---|---|
|  | <ul style="list-style-type: none"> <li>• Clean and drape patient's eye with aseptic technique</li> </ul>  |   |   |
| Assist the Procedure                                   | <ul style="list-style-type: none"> <li>• Hand washing, gowning, and gloving using aseptic technique and proper sterile attire</li> <li>• Drape patient after cleaning the correct eye</li> </ul> <p><u>Steps (Perform by doctor)</u></p> <ol style="list-style-type: none"> <li>1) Fix speculum in position</li> <li>2) Use indental to find the location of retinal break</li> <li>3) After identify, use marker indental to mark the spot.</li> <li>4) The retinal break spot is highlighted with surgical skin marker to avoid misallocation</li> <li>5) Place the cryo probe on the spot of retinal break and press the pedal to start the procedure</li> <li>6) Once done, release pedal</li> <li>7) Instil Antibiotics</li> <li>8) Apply eye pad</li> </ol> |   | <ul style="list-style-type: none"> <li>• OT gown and sterile glove</li> <li>• Eye drape</li> </ul> <p><u>Steps (Hand over by AMO)</u></p> <ol style="list-style-type: none"> <li>1) Eye speculum</li> <li>2) Indental</li> <li>3) Marker indental</li> <li>4) Surgical skin marker pen</li> <li>5) Skin marker pen and cryo probe</li> <li>6) Cryo machine pedal</li> <li>7) Antibiotic drop</li> <li>8) Eye pad</li> </ol> |
| Cleaning And Sterilization of Microsurgery Instruments | Refer to Cleaning and sterilization of microsurgery instruments guideline   | Policies and Procedure on Infection Prevention and control, MOH, 2018 (3 <sup>rd</sup> edition) | Refer to Cleaning and sterilization of microsurgery instruments guideline   |
| Health Education                                       | <p>Post-operative care</p> <ul style="list-style-type: none"> <li>• Positioning as indicated and cleanliness of surgical site</li> </ul>  |   |   |

|               |  |                               |  |
|---------------|--|-------------------------------|--|
|               | <ul style="list-style-type: none"> <li>• Observe side effects / complications</li> <li>• Medication compliance</li> <li>• Emphasize on follow up compliance</li> </ul> |                               |  |
| Documentation | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>   | Safe Surgery Safe Life (SSSL) | <ul style="list-style-type: none"> <li>• Procedure book / census</li> <li>• SSSL Form</li> </ul> |

### REFERENCE

Albert, D. M., Jakobiec, F. A., & Miller, J. W. (2008). *Albert & Jakobiec's principles and practice of ophthalmology*. Saunders/Elsevier.

Chignell, A. H. (2012). *Retinal Detachment Surgery*. Springer Science & Business Media.

Sadda, S. R., Schachat, A. P., Wilkinson, C. P., Hinton, D. R., Wiedemann, P., K. Bailey Freund, & Sarraf, D. (2022). *Ryan's Retina E-Book*. Elsevier Health Sciences.

**SCLERAL BUCKLING**

|                           |   |
|---------------------------|---|
| <b>INTRODUCTION</b>       | Scleral buckling is one of the surgical procedures used to repair a retinal detachment. In this surgery, a surgeon attaches a piece of silicone or a sponge onto the sclera at the spot of a retinal tear. The buckle is designed to repair retinal detachment by pushing the sclera toward the retinal tear or break. It can be done in combination with vitrectomy.   |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be assisted by a privileged Assistant Medical Officer (AMO).</li> <li>• All patient with retinal detachment as indicated.</li> </ul>  |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• Sclera buckle only in simple retinal detachment as indicated.</li> <li>• Combination with vitrectomy in complex retinal detachment.</li> </ul>   |
| <b>WORKFLOW</b>           | <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive Patient]     Receive --&gt; Assess[Assess / Verify Patient /<br/>Correct Site / Allergy Status]     Assess --&gt; Fit{Fit for<br/>Procedure}     Fit -- No --&gt; Refer[Refer to Doctor]     Fit -- Yes --&gt; PrepareInst[Prepare Instruments /<br/>Equipment / Medication]     PrepareInst --&gt; PreparePat[Prepare Patient]     PreparePat --&gt; Assist[Assist the<br/>Procedure]     Assist --&gt; Comp{Complication}     Comp -- Yes --&gt; Refer     Comp -- No --&gt; Clean[Cleaning and Sterilization of<br/>Microsurgical Instruments]     Clean --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End   </pre> |

| WORK INSTRUCTION  |   |   |  |
|---|---|---|--|
| ACTIVITY  | WORK PROCESS  | STANDARD  | REQUIREMENT  |
| Receive Patient   | <ul style="list-style-type: none"> <li>• Register patient particulars in patient's record book</li> </ul>   | Malaysian Patient Safety Goal 2.0   | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Record book / census</li> </ul>  |
| Assess / Verify Patient / Correct Site / Allergy Status | <ul style="list-style-type: none"> <li>• Verify correct patient</li> <li>• Verify correct site</li> <li>• Verify correct procedure</li> <li>• Verify allergy status</li> <li>• Ensure written consent has been taken</li> </ul>   | <p><i>Manual Arahan Kerja</i></p> <p>Safe Surgery Safe Life (SSSL)</p> <p>Malaysian Patient Safety Goal 2.0</p> | <ul style="list-style-type: none"> <li>• Safe Surgery Safe Life (SSSL) Form</li> <li>• Operation theatre (OT) list</li> <li>• Signed consent form</li> </ul>   |
| Prepare Instruments / Equipment                         | <ul style="list-style-type: none"> <li>• Make sure Vitrectomy machine works perfectly (for combined procedure)<br/><b>*Refer to vitrectomy guidelines</b></li> <li>• Prepare function Binocular Indirect Ophthalmoscope (B.I.O) and sterile lens</li> <li>• Prepare micro instrument set</li> <li>• Prepare functioning Cryo / laser machine</li> <li>• Prepare supplementary items</li> <li>• Prepare solutions</li> </ul> |   | <ul style="list-style-type: none"> <li>• Vitrectomy machine</li> <li>• Lens pan retina 2.2 / 20D / 30D</li> <li>• Instrument:             <ol style="list-style-type: none"> <li>Vitreoretinal set / Buckle set</li> </ol> <b>* Refer Appendix 14</b> </li> <li>• Cryo probe / laser probe</li> <li>• Supplementary items:             <ol style="list-style-type: none"> <li>Band type 40/41/240/</li> <li>Tires -276</li> <li>Suture 2/0 silk</li> <li>Suture 5/0 braided polyester</li> <li>Intraocular gas – C3F8 / SF6</li> </ol> </li> <li>• Solutions:</li> </ul> |

|                      |  |  |  |
|----------------------|--|--|--|
|                      | <ul style="list-style-type: none"> <li>• Prepare disposable item</li> <li>• Medication</li> </ul>  |  | <ul style="list-style-type: none"> <li>i. Antiseptic</li> <li>ii. Normal saline</li> <li>• Disposable item: <ul style="list-style-type: none"> <li>i. Eye drape</li> <li>ii. Syringe</li> <li>iii. Sterile gauze and cotton bud</li> <li>iv. Sterile surgical glove</li> <li>v. Needles</li> <li>vi. Surgical marker pen</li> <li>vii. Eye pad</li> </ul> </li> <li>• Medication: <ul style="list-style-type: none"> <li>i. Topical Anaesthesia</li> <li>ii. Local Anaesthesia - Ropivacaine HCL 2mg/ml</li> <li>iii. Topical Antibiotics</li> </ul> </li> </ul> |
| Prepare Patient      | <ul style="list-style-type: none"> <li>• Inform the patient about the procedure</li> <li>• Position patient in supine</li> <li>• Ensure full pupillary dilation</li> <li>• Clean and drape patient's eye with aseptic technique</li> </ul>   | <p>Malaysian Patient Safety Goal 2.0</p> <p><i>Manual Arahan Kerja</i></p> | <ul style="list-style-type: none"> <li>• Patient record</li> <li>• Dilating eye drop</li> <li>• Eye Drape</li> </ul>   |
| Assist the Procedure | <ol style="list-style-type: none"> <li>1. Hand washing, gowning, and gloving using aseptic technique and proper sterile attire</li> <li>2. Drape patient after cleaning the correct eye</li> </ol> <p><u>Steps (Perform by doctor)</u></p> <ol style="list-style-type: none"> <li>1) 360 degree / limited peritomy</li> <li>2) Isolate rectus muscle and apply bridle sutures by 2/0 or 4/0 silk</li> <li>3) Surgeon examines fundus by Binocular</li> </ol> |  | <ul style="list-style-type: none"> <li>• OT gown and Sterile glove</li> <li>• Eye drape</li> </ul> <p><u>Steps (Hand over by AMO)</u></p> <ol style="list-style-type: none"> <li>1) Conjunctiva forceps and blunt Wescott scissors.</li> <li>2) Squint hook, 2/0 and 4/0 silk suture.</li> <li>3) Binocular indirect ophthalmoscope</li> </ol>   |

|  |   |                                     |  |
|--|---|-------------------------------------|--|
|  | <p>indirect ophthalmoscope to localised the retinal break accurately. Retinal breaks are marked by marker pen</p> <p>4) Cryotherapy / laser is applied to retinal break</p> <p>5) Appropriately sized / type explant is chosen</p> <p>6) Tire and band are sutured to sclera and tied</p> <p>7) Occasionally gas / air may be injected into the globe using 27-gauge needle</p> <p>8) Repeat fundus examination with Binocular Indirect Ophthalmoscope to check central retina artery perfusion and buckle position.</p> <p>9) The peritomy is closed with 7/0 absorbable suture</p> <p>10) Prepare subconjunctival injection medications in ratio 1:1:1</p> <p>11) Apply eye pad</p> |                                     | <p>with lens and marker pen</p> <p>4) Cryotherapy probe</p> <p>5) Band and tires</p> <p>6) 5/0 braided polyester suture, sleeve and band</p> <p>7) Gas, needle and cotton bud as indicated</p> <p>8) Binocular Indirect Ophthalmoscope (B.I.O) and lens</p> <p>9) 7/0 absorbable suture</p> <p>10) Medication: <ul style="list-style-type: none"> <li>• Dexamethasone 4mg/ml</li> <li>• Gentamicin 80mg/2ml</li> <li>• Lignocaine HCL 2% 20mg/ml (optional)</li> </ul> </p> <p>11) Eye pad</p> |
| Cleaning And Sterilization of Microsurgery Instruments | Refer to Cleaning and sterilization of microsurgery   | Policies and Procedure on Infection | Refer to Cleaning and sterilization of microsurgery instruments guideline  |

|                  | instruments guideline  | Prevention and control, MOH, 2018 (3 <sup>rd</sup> edition) |  |
|------------------|--|---|--|
| Health Education | Post-operative care <ul style="list-style-type: none"> <li>• Positioning as indicated and</li> <li>• Cleanliness of surgical site</li> <li>• Observe side effects / complications</li> <li>• Medication compliance</li> <li>• Emphasize on follow up compliance</li> </ul> |   |  |
| Documentation    | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>   | Safe Surgery Safe Life (SSSL)                               | <ul style="list-style-type: none"> <li>• Procedure book / census</li> <li>• SSSL Form</li> </ul> |

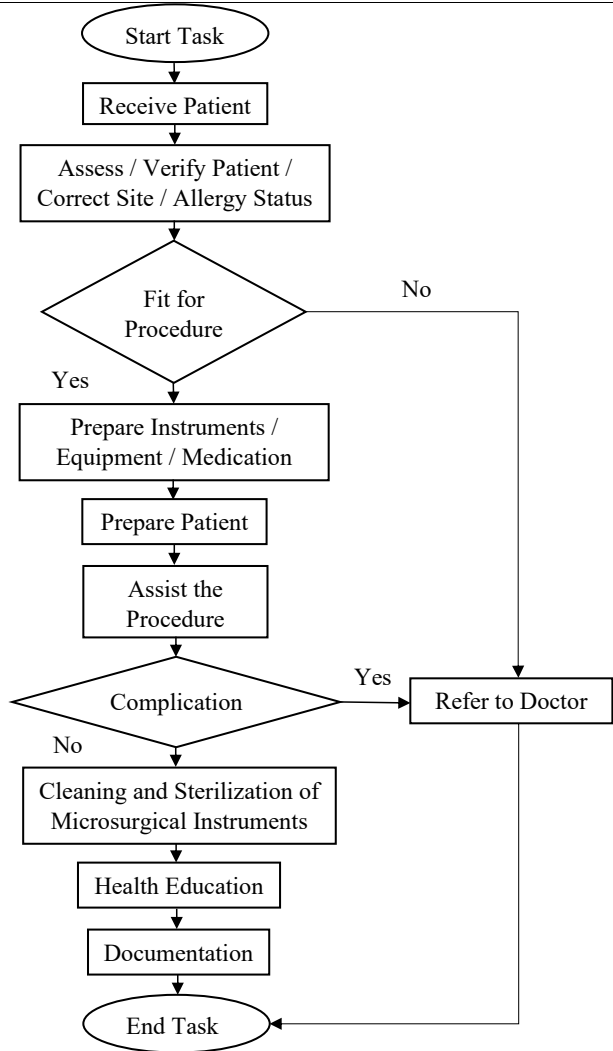
## REFERENCE

- Brinton, D. A., Wilkinson, C. P., & Hilton, G. F. (2009). *Retinal detachment: principles and practice*. Oxford University Press; In cooperation with the American Academy of Ophthalmology.
- Kreissig, I. (2005). *Primary retinal detachment options for repair; with 20 tables*. Berlin Heidelberg New York Springer.
- Ulrich Spandau, Tomic, Z., & Ruiz-Casas, D. (2023). *Retinal Detachment Surgery and Proliferative Vitreoretinopathy*. Springer Nature.

**VITRECTOMY**

|                           |  |
|---------------------------|--|
| <b>INTRODUCTION</b>       | Vitrectomy is a type of eye surgery used to treat various retina and vitreous problems. It involves the removal of the vitreous and replacement with tamponade. The surgery can be performed under local, regional, or general anaesthesia   |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be assisted by a privileged Assistant Medical Officer (AMO).</li> <li>• All patient indicated for vitrectomy surgery.</li> </ul>   |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• Diagnostic           <ol style="list-style-type: none"> <li>a. Intraocular infection</li> <li>b. Intraocular Inflammation</li> <li>c. Intraocular tumour</li> </ol> </li> <li>• Therapeutic           <ol style="list-style-type: none"> <li>a. Complication of diabetic eye disease</li> <li>b. Retinal detachment</li> <li>c. Vitreous haemorrhage secondary to others</li> <li>d. Macula diseases</li> <li>e. Ocular Trauma</li> <li>f. Cataract surgery complication</li> <li>g. Intraocular infection</li> </ol> </li> </ul> |

## WORKFLOW



| WORK INSTRUCTION                                       |   |   |  |
|--|---|---|--|
| ACTIVITY   | WORK PROCESS  | STANDARD  | REQUIREMENT  |
| Receive Patient  | <ul style="list-style-type: none"> <li>• Register patient particulars in patient's record book</li> </ul>   | Malaysian Patient Safety Goal 2.0   | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Record book / census</li> </ul>  |
| Assess / Verify Patient /Correct Site / Allergy Status | <ul style="list-style-type: none"> <li>• Verify correct patient</li> <li>• Verify correct site</li> <li>• Verify correct procedure</li> <li>• Verify allergy status</li> <li>• Ensure written consent has been taken</li> </ul>   | <p><i>Manual Arahan Kerja</i></p> <p>Safe Surgery Safe Life (SSSL)</p> <p>Malaysian Patient Safety Goal 2.0</p> | <ul style="list-style-type: none"> <li>• Safe Surgery Safe Life (SSSL) Form</li> <li>• Operation theatre (OT) list</li> <li>• Signed consent form</li> </ul>   |
| Prepare Instruments / Equipment                        | <ul style="list-style-type: none"> <li>• Prepare machine</li> <li>• Ensure optimum compressed air pressure</li> <li>• Ensure correct vitrectomy parameter (IOP) and setting for core and shaving mode</li> <li>• Prepare complete Vitrectomy set.</li> <li>• Microscope and viewing system</li> <li>• Prepare supplementary instruments</li> <li>• Prepare disposable item</li> <li>• Prepare Intra operative adjuvant</li> </ul> |   | <ul style="list-style-type: none"> <li>• Vitrectomy machine</li> <li>• Endo laser machine</li> <li>• Cryotherapy machine</li> <li>• Vitrectomy set</li> <li>*<b>Refer Appendix 14</b></li> <li>• Non-Contact Panoramic Viewing System (EIBOS/BIOM/Resight)</li> <li>• Supplementary instruments: <ul style="list-style-type: none"> <li>i. Cryotherapy probe</li> </ul> </li> <li>• Disposable items: <ul style="list-style-type: none"> <li>i. Eye drape</li> <li>ii. Sterile gauze and cotton bud</li> <li>ii. Needle 26G</li> <li>iii. Endo-laser probe</li> <li>iv. Eye pad</li> </ul> </li> <li>• Intra operative adjuvant (as indicated): <ul style="list-style-type: none"> <li>i. Membrane staining</li> <li>ii. Heavy liquid</li> </ul> </li> </ul> |

|                      |  |   |   |
|----------------------|--|---|---|
|                      | <ul style="list-style-type: none"> <li>• Prepare tamponade           <ol style="list-style-type: none"> <li>i. Gas preparation, example, 14% C3F8 gas= 7cc of pure C3F8 gas + 43cc air in 50cc syringe (attach syringe with air filter before withdrawal of gas)</li> </ol> </li> <li>• Prepare solutions</li> <li>• Verify correct medication.</li> <li>• Check medication expiry date</li> </ul> |   | <ul style="list-style-type: none"> <li>• Intra ocular tamponade (as indicated):           <ol style="list-style-type: none"> <li>i. Silicone oil<br/>1000/ 2000/ 5000</li> <li>ii. Gas C3F8 / SF6</li> </ol> </li> <li>• Solutions:           <ol style="list-style-type: none"> <li>i. Antiseptic</li> <li>ii. Normal saline</li> <li>iii. Balance salt solution</li> </ol> </li> <li>• Medication:           <ol style="list-style-type: none"> <li>i. Triamcinolone Acetonide<br/>40mg/ml</li> <li>ii. Ropivacaine HCL<br/>2mg/ml</li> <li>iii. Topical anaesthesia</li> <li>iv. Topical antibiotic</li> </ol> </li> </ul> |
| Prepare Patient      | <ul style="list-style-type: none"> <li>• Inform the patient about the procedure</li> <li>• Position patient in supine</li> <li>• Clean and drape patient's eye with aseptic technique</li> </ul>   | <p>Malaysian Patient Safety Goal 2.0</p> <p><i>Manual Arahan Kerja</i></p> <p>Safe Surgery Safe Life (SSSL)</p> | <ul style="list-style-type: none"> <li>• Patient record</li> <li>• Dilating eye drop</li> </ul>   |
| Assist the Procedure | <ul style="list-style-type: none"> <li>• Hand washing, gowning, and gloving using aseptic technique and proper sterile attire</li> </ul> <p><u>Steps (Perform by doctor)</u></p> <ol style="list-style-type: none"> <li>1) Make 3 ports / sclerotomies for infusion, light pipe and vitreous cutter. Use 23G /25G/ 27G trocar used for sclerotomies</li> </ol>                                     |   | <ul style="list-style-type: none"> <li>• OT gown</li> <li>• Sterile glove</li> </ul> <p><u>Steps (Hand over by AMO)</u></p> <ol style="list-style-type: none"> <li>1) Trocar</li> </ol>   |

|  |  |   |  |
|--|--|---|--|
|  | <p>(as preferred / available)</p> <ol style="list-style-type: none"> <li>2) Pass on infusion port followed by light pipe and vitrectomy cutter to start vitrectomy procedure</li> <li>3) Bring in Non-Contact Panoramic Viewing System (EIBOS/BIOM/Resight) into position and off OT light</li> <li>4) Prepare and standby supplementary item as requested according to additional procedure</li> <li>5) Prepare subconjunctival injection medications in ratio 1:1:1</li> <li>6) Sub conjunctival injection given by doctor at the end of the operation</li> <li>7) Clean surgical area with dry and wet gauze</li> <li>8) Apply ointment antibiotic</li> <li>9) Apply eye pad</li> </ol> |   | <ol style="list-style-type: none"> <li>2) Infusion line, light pipe and vitreous cutter 23G /25G/ 27G</li> <li>3) Panoramic Viewing System (EIBOS/BIOM/Resight)</li> <li>4) Intra ocular tamponade (as indicated): <ul style="list-style-type: none"> <li>• Silicone oil 1000/2000/5000</li> <li>• Gas C3F8 / SF6</li> </ul> </li> <li>5) Medication: <ul style="list-style-type: none"> <li>• Dexamethasone 4mg/ml</li> <li>• Gentamicin 80mg/2ml</li> <li>• Lignocaine HCL 2 % 20mg/ml (optional)</li> </ul> </li> <li>6) Sub conjunctival injection in syringe</li> <li>7) Gauze</li> <li>8) Ointment antibiotic</li> <li>9) Eye pad</li> </ol> |
| Cleaning And Sterilization of Microsurgery Instruments | Refer to Cleaning and sterilization of microsurgery instruments guideline  | Policies and Procedure on Infection Prevention and control, MOH, 2018 (3 <sup>rd</sup> edition) | Refer to Cleaning and sterilization of microsurgery instruments guideline  |

|                  |   |                               |   |
|------------------|---|-------------------------------|---|
| Health Education | Post-operative care <ul style="list-style-type: none"> <li>• Positioning as indicated and cleanliness of surgical site</li> <li>• Observe side effects / complications</li> <li>• Medication compliance</li> <li>• Emphasize on follow up compliance</li> </ul> |                               |   |
| Documentation    | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>  | Safe Surgery Safe Life (SSSL) | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> <li>• SSSL Form</li> </ul> |

#### REFERENCE

Jain, A., Natarajan, S., & Saxena, S. (2021). *Cutting-edge Vitreoretinal Surgery*. Springer Nature.

Paulo, Berger, A. R., & Chow, D. (2016). Vitreoretinal instruments: vitrectomy cutters, endoillumination and wide-angle viewing systems. *International Journal of Retina and Vitreous*, 2(1). <https://doi.org/10.1186/s40942-016-0052-9>

Williamson, T. H. (2013). *Vitreoretinal Surgery*. Springer Science & Business Media.

**INTRA OCULAR GAS INJECTION**

|                           |   |
|---------------------------|---|
| <b>INTRODUCTION</b>       | Intra ocular gases have both higher surface tension and higher buoyancy and used for treatment of rhegmatogenous retinal detachment / displacement of sub macular haemorrhage.  |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be assisted by a privileged Assistant Medical Officer (AMO).</li> <li>• All patient indicated for intra ocular gases tamponade.</li> </ul>  |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• To treat simple, fresh and superior retinal detachment as indicated</li> <li>• To displace sub macular haemorrhage secondary to polypoidal choroidal vasculopathy (PCV)</li> </ul>   |
| <b>WORKFLOW</b>           | <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive Patient]     Receive --&gt; Assess[Assess / Verify Patient / Correct Site / Allergy Status]     Assess --&gt; Fit{Fit for Procedure}     Fit -- No --&gt; Refer[Refer to Doctor]     Fit -- Yes --&gt; Prepare[Prepare Instruments / Equipment / Medication]     Prepare --&gt; Prep[Prepare Patient]     Prep --&gt; Assist[Assist the Procedure]     Assist --&gt; Comp{Complication}     Comp -- Yes --&gt; Refer     Comp -- No --&gt; Clean[Cleaning and Sterilization of Microsurgical Instruments]     Clean --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End     </pre> |

| WORK INSTRUCTION  |   |  |  |
|---|---|--|--|
| ACTIVITY  | WORK PROCESS  | STANDARD   | REQUIREMENT  |
| Receive Patient   | <ul style="list-style-type: none"> <li>Register patient particulars in patient's record book</li> </ul>   | Malaysian Patient Safety Goal 2.0  | <ul style="list-style-type: none"> <li>Patient appointment card / record</li> <li>Record book / census</li> </ul>  |
| Assess / Verify Patient / Correct Site / Allergy Status | <ul style="list-style-type: none"> <li>Verify correct patient</li> <li>Verify correct site</li> <li>Verify correct procedure</li> <li>Verify allergy status</li> <li>Ensure written consent has been taken</li> </ul> | <p><i>Manual Arahan Kerja</i><br/>Safe Surgery Safe Life (SSSL)</p> <p>Malaysian Patient Safety Goal 2.0</p> | <ul style="list-style-type: none"> <li>Safe Surgery Safe Life (SSSL) Form</li> <li>Operation theatre (OT) list</li> <li>Signed consent form</li> </ul>   |
| Prepare Instruments / Equipment                         | <ul style="list-style-type: none"> <li>Prepare gas</li> <li>Prepare supplementary item</li> <li>Prepare solutions</li> <li>Prepare disposable item</li> <li>Medication</li> </ul>                                     |  | <ul style="list-style-type: none"> <li>Gas               <ol style="list-style-type: none"> <li>100 % for SF6 or 100 % for C3F8</li> </ol> </li> <li>Supplementary instruments:               <ol style="list-style-type: none"> <li>Hammer extension tubing</li> <li>Gas filter</li> <li>3-way connector</li> </ol> </li> <li>Solutions:               <ol style="list-style-type: none"> <li>Antiseptic</li> <li>Normal saline</li> </ol> </li> <li>Disposable item:               <ol style="list-style-type: none"> <li>Eye drape</li> <li>Syringe</li> <li>Sterile gauze and cotton bud</li> <li>Sterile surgical glove</li> <li>Needles</li> <li>Eye pad                   <ul style="list-style-type: none"> <li>Medication:                       <ol style="list-style-type: none"> <li>Topical anaesthesia</li> <li>Topical Antibiotics – Ointment antibiotic</li> </ol> </li> </ul> </li> </ol> </li> </ul> |
| Prepare Patient   | <ul style="list-style-type: none"> <li>Verify correct patient</li> <li>Inform the patient about the procedure</li> </ul>  | <p>Malaysian Patient Safety Goal 2.0</p> <p><i>Manual Arahan Kerja</i></p>                                   | <ul style="list-style-type: none"> <li>Patient record</li> <li>Dilating eye drop</li> </ul>  |

|  |   |   |   |
|--|---|---|---|
|  | <ul style="list-style-type: none"> <li>• Position patient in supine</li> <li>• Clean and drape patient's eye with aseptic technique</li> </ul>  |   |   |
| Assist the Procedure                                   | <ol style="list-style-type: none"> <li>1) Hand washing, gowning and gloving using aseptic technique and proper sterile attire</li> <li>2) Drape patient after cleaning the correct eye</li> </ol> <p><b>*Refer to vitrectomy guidelines</b></p> <p><u>Steps (Perform by doctor)</u></p> <ol style="list-style-type: none"> <li>1) Perform an anterior chamber paracentesis to remove 0.1 to 0.25 mL of aqueous humor.</li> <li>2) Inject gas bubble using a small needle.</li> <li>3) Sub conjunctival antibiotic given by doctor</li> <li>4) Clean surgical area with dry and wet gauze</li> <li>5) Apply antibiotic ointment</li> <li>6) Apply eye pad</li> </ol> |   | <ul style="list-style-type: none"> <li>• OT gown and Sterile glove</li> <li>• Eye drape</li> </ul> <p><u>Steps (Hand over by AMO)</u></p> <ol style="list-style-type: none"> <li>1) Gas injection 100 % for SF6(0.5) or 100 % for C3F8 (0.3) with instructed by doctor</li> <li>2) prepare gas injection -</li> <li>3) Medication:             <ol style="list-style-type: none"> <li>i. Dexamethasone 0.5ml</li> <li>ii. Cefuroxime 0.5ml</li> <li>iii. Lignocaine HCL 2% 0.5ml</li> </ol> </li> <li>4) Gauze</li> <li>5) Antibiotic ointment</li> <li>6) Eye pad</li> </ol> |
| Cleaning And Sterilization of Microsurgery Instruments | Refer to Cleaning and sterilization of microsurgery instruments guideline   | Policies and Procedure on Infection Prevention and control, MOH, 2018 (3 <sup>rd</sup> edition) | Refer to Cleaning and sterilization of microsurgery instruments guideline   |
| Health Education                                       | Post-operative care   |   |   |

|               |   |                               |   |
|---------------|---|-------------------------------|---|
|               | <ul style="list-style-type: none"> <li>• Positioning as indicated and</li> <li>• Cleanliness of surgical site</li> <li>• Observe side effects / complications</li> <li>• Advice patient to go to eye clinic during office hour and emergency department after office hour if any complication occurs</li> <li>• Medication compliance</li> <li>• Emphasize on follow up compliance</li> </ul> |                               |   |
| Documentation | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>  | Safe Surgery Safe Life (SSSL) | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> <li>• SSSL Form</li> </ul> |

## REFERENCE

Borowicz, D., Nowomiejska, K., Nowakowska, D., Brzozowska, A., Toro, M. D., Avitabile, T., Jünemann, A. G., & Rejdak, R. (2019). Functional and morphological results of treatment of macula-on and macula-off rhegmatogenous retinal detachment with pars plana vitrectomy and sulfur hexafluoride gas tamponade. *BMC Ophthalmology*, 19(1).

Sebag, J. (2012). *The Vitreous*. Springer Science & Business Media.

Ryan, S. J. (2001). *Retina: Medical retina*.

Yanoff, M., & Sassani, J. W. (2009). *Ocular pathology*. Mosby.

**REMOVAL OF SILICONE OIL**

|                           |   |
|---------------------------|---|
| <b>INTRODUCTION</b>       | Silicone oil is often used as a retinal tamponade after complex retinal detachment repair. However, due to the potential for long-term complications, it is necessary to remove the oil from the eye.   |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be assisted by a privileged Assistant Medical Officer (AMO).</li> <li>• All patient with silicone oil removal</li> </ul>  |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• To remove silicone oil for visual rehabilitation</li> <li>• To avoid silicone oil related complication</li> </ul>  |
| <b>WORKFLOW</b>           | <pre> graph TD     Start([Start Task]) --&gt; Receive[Receive Patient]     Receive --&gt; Assess[Assess / Verify Patient /<br/>Correct Site / Allergy Status]     Assess --&gt; Fit{Fit for<br/>Procedure}     Fit -- No --&gt; Refer[Refer to Doctor]     Fit -- Yes --&gt; Prepare[Prepare Instruments /<br/>Equipment / Medication]     Prepare --&gt; Prep[Prepare Patient]     Prep --&gt; Assist[Assist the<br/>Procedure]     Assist --&gt; Comp{Complication}     Comp -- Yes --&gt; Refer     Comp -- No --&gt; Clean[Cleaning and Sterilization of<br/>Microsurgical Instruments]     Clean --&gt; Health[Health Education]     Health --&gt; Doc[Documentation]     Doc --&gt; End([End Task])     Refer --&gt; End   </pre> |

| WORK INSTRUCTION  |  |   |  |
|---|--|---|--|
| ACTIVITY  | WORK PROCESS   | STANDARD  | REQUIREMENT  |
| Receive Patient   | <ul style="list-style-type: none"> <li>Register patient particulars in patient's record book</li> </ul>  | Malaysian Patient Safety Goal 2.0   | <ul style="list-style-type: none"> <li>Patient appointment card / record</li> <li>Record book / census</li> </ul>  |
| Assess / Verify Patient / Correct Site / Allergy Status | <ul style="list-style-type: none"> <li>Verify correct patient</li> <li>Verify correct site</li> <li>Verify correct procedure</li> <li>Verify allergy status</li> <li>Ensure written consent has been taken.</li> </ul> | <p><i>Manual Arahan Kerja</i></p> <p>Safe Surgery Safe Life (SSSL)</p> <p>Malaysian Patient Safety Goal 2.0</p> | <ul style="list-style-type: none"> <li>Safe Surgery Safe Life (SSSL) Form</li> <li>Operation theatre (OT) list</li> <li>Signed consent form</li> </ul>   |
| Prepare Instruments / Equipment                         | <ul style="list-style-type: none"> <li>Make sure Vitrectomy machine works perfectly</li> <li>Prepare Vitrectomy set</li> <li>Prepare solutions</li> <li>Prepare disposable item</li> <li>Medication</li> </ul>         |   | <ul style="list-style-type: none"> <li>Vitrectomy machine</li> <li>Vitrectomy set</li> <li><b>*Refer Appendix 14</b></li> <li>Solutions:             <ol style="list-style-type: none"> <li>Povidone iodine</li> <li>Normal saline</li> </ol> </li> <li>Disposable item:             <ol style="list-style-type: none"> <li>23G MVR blade or Trocar system</li> <li>Light pipe</li> <li>Eye drape</li> <li>Syringe 20cc</li> <li>Sterile gauze and cotton bud</li> <li>Sterile surgical glove</li> <li>Needle</li> <li>Eye pad</li> </ol> </li> <li>Medication:             <ol style="list-style-type: none"> <li>Topical anaesthesia</li> <li>Topical Antibiotics</li> </ol> </li> </ul> |
| Prepare Patient   | <ul style="list-style-type: none"> <li>Verify correct patient</li> </ul>   | Malaysian Patient Safety Goal 2.0   | <ul style="list-style-type: none"> <li>Patient record</li> </ul>   |

|                      |   |                            |  |
|----------------------|---|----------------------------|--|
|                      | <ul style="list-style-type: none"> <li>• Inform the patient about the procedure</li> <li>• Position patient in supine</li> <li>• Clean and drape patient's eye with aseptic technique</li> </ul>  | <i>Manual Arahan Kerja</i> | <ul style="list-style-type: none"> <li>• Antiseptic solution</li> <li>• Eye drape</li> </ul>   |
| Assist the Procedure | <ul style="list-style-type: none"> <li>• Hand washing, gowning, and gloving using aseptic technique and proper sterile attire</li> <li>• Drape patient after cleaning the correct eye</li> </ul> <p><u>Steps (Perform by doctor)</u><br/>Manual or vitrectomy machine</p> <ol style="list-style-type: none"> <li>1) Make 2 ports/ sclerotomies for infusion, and light pipe</li> <li>2) Use 23/25G or 27G trocar used in sclerotomies</li> <li>3) Using 20 cc syringe to withdraw silicone oil</li> <li>4) Bring in Non-Contact Panoramic Viewing System (EIBOS/BIOM / Resight) into position and off OT light</li> <li>5) Inspection on posterior pole for identify current state of optic disc and retina</li> <li>6) Removal of sclerotomies and suture</li> </ol> |                            | <ul style="list-style-type: none"> <li>• OT gown</li> <li>• Sterile glove</li> <li>• Eye Drape</li> </ul> <p><u>Steps (Hand over by AMO)</u></p> <ol style="list-style-type: none"> <li>1) Infusion port followed by light pipe.</li> <li>2) 23/25G or 27G trocar</li> <li>3) 20 cc syringe to doctor</li> <li>4) Non-Contact Panoramic Viewing System (EIBOS/BIOM / Resight)</li> <li>5) Observe</li> <li>6) Pass plug forceps, needle holder and suture</li> </ol> |

|  |   |   |  |
|--|---|---|--|
|  | 7) Apply eye pad  |   | 7/0 absorbable to the surgeon to close the wound<br>7) Eye pad                                   |
| Cleaning And Sterilization of Microsurgery Instruments | Refer to Cleaning and sterilization of microsurgery instruments guideline   | Policies and Procedure on Infection Prevention and control, MOH, 2018 (3 <sup>rd</sup> edition) | Refer to Cleaning and sterilization of microsurgery instruments guideline                        |
| Health Education                                       | Post-operative care <ul style="list-style-type: none"> <li>• Positioning as indicated and cleanliness of surgical site</li> <li>• Observe side effects / complications</li> <li>• Medication compliance</li> <li>• Emphasize on follow up compliance</li> </ul> |   |  |
| Documentation  | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>  | Safe Surgery Safe Life (SSSL)   | <ul style="list-style-type: none"> <li>• Procedure book / census</li> <li>• SSSL Form</li> </ul> |

## REFERENCE

- Hu, S.-Q., Jin, H.-Y., Wang, Y., & Zhu, L.-P. (2019). Factors of Retinal Re-detachment and Visual Outcome after Intraocular Silicone Oil Removal in Silicone Oil-filled Eyes. *Current Eye Research*, 45(6), 742–748.
- Lucke, K., & Laqua, H. (2012). *Silicone Oil in the Treatment of Complicated Retinal Detachments*. Springer Science & Business Media.
- Peyman, G. A. (2019). *Vitreoretinal Surgical Techniques, Second Edition*. Routledge.

**EVISCKERATION SURGERY**

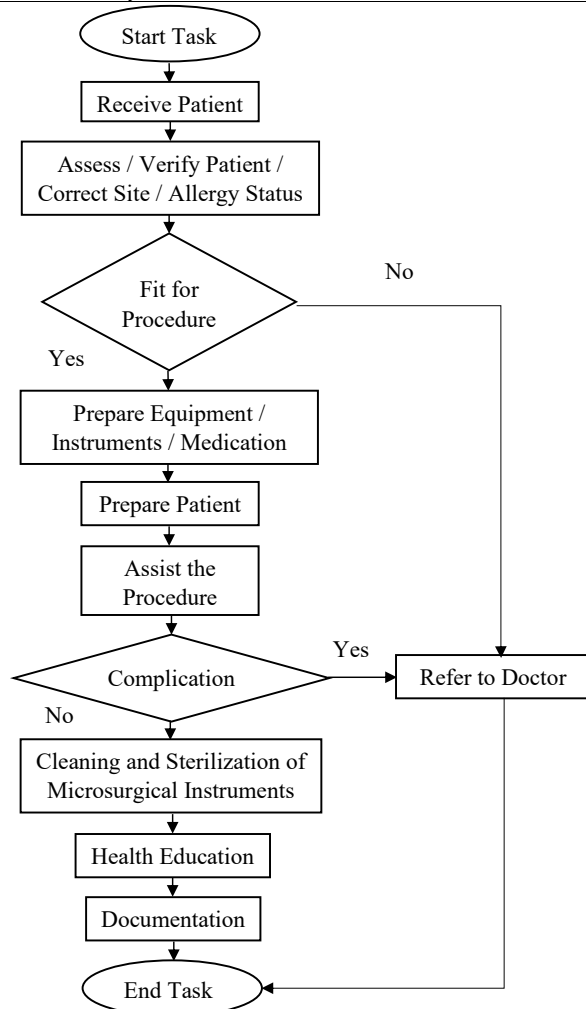
**INTRODUCTION** Evisceration is a surgical technique in which all intraocular contents are removed, preserving the remaining scleral shell, extraocular muscle attachments, and surrounding orbital adnexa. The procedure often involves placing an implant into the evisceration cavity to maintain the appropriate orbital volume.

**SCOPE**

- The procedure will be assisted by a privileged Assistant Medical Officer (AMO).
- All patient without visual potential indicated for evisceration.

**SPECIFIC OBJECTIVE**

- Severe intraocular infection.
- Severe globe injury.
- Painful Blind Eye.

**WORKFLOW**

| WORK INSTRUCTION  |  |   |  |
|---|--|---|--|
| ACTIVITY  | WORK PROCESS   | STANDARD  | REQUIREMENT  |
| Receive Patient   | <ul style="list-style-type: none"> <li>• Register patient particulars in patient's record book.</li> </ul>   | Malaysian Patient Safety Goal 2.0   | <ul style="list-style-type: none"> <li>• Patient appointment card / record</li> <li>• Record book / census</li> </ul>  |
| Assess / Verify Patient / Correct Site / Allergy Status | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Verify correct site.</li> <li>• Verify correct procedure.</li> <li>• Verify allergy status</li> <li>• Ensure written consent has been taken.</li> </ul>  | <p><i>Manual Arahan Kerja</i></p> <p>Safe Surgery Safe Life (SSSL)</p> <p>Malaysian Patient Safety Goal 2.0</p> | <ul style="list-style-type: none"> <li>• Safe Surgery Safe Life (SSSL) Form</li> <li>• Operation Theatre (OT) list</li> <li>• Signed consent form</li> </ul>   |
| Prepare Instruments / Equipment / Medication            | <ul style="list-style-type: none"> <li>• Make sure diathermy machine works perfectly.</li> <li>• Prepare complete &amp; sterile evisceration set.</li> <li>• Prepare supplementary instruments</li> <li>• Prepare disposable item.</li> <li>• Verify correct medication.</li> <li>• Check medication expiry date.</li> <li>• Verify correct implant.</li> <li>• Check implants expiry date.</li> </ul> |   | <ul style="list-style-type: none"> <li>• Diathermy machine.</li> <li>• Evisceration Set.<br/><b>*Refer Appendix 15</b></li> <li>• Supplementary instruments               <ol style="list-style-type: none"> <li>Cautery forceps and cable</li> </ol> </li> <li>• Disposable item               <ol style="list-style-type: none"> <li>Dressing set</li> <li>7/0 absorbable suture</li> <li>Eye drape</li> <li>Syringes &amp; needles</li> <li>Sterile gauze</li> <li>Cotton bud</li> </ol> </li> <li>• Medication               <ol style="list-style-type: none"> <li>Cloxacillin powder 1000mg</li> <li>Adrenaline 1mg/ml</li> <li>Topical Antibiotics</li> </ol> </li> <li>• Implant               <ol style="list-style-type: none"> <li>Orbital implants</li> <li>Conformer</li> </ol> </li> </ul> |

|                      |   |                                   |   |
|----------------------|---|-----------------------------------|---|
| Prepare Patient      | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Inform the patient about the procedure.</li> <li>• Prepare patient in supine position.</li> <li>• Clean and drape patient's eye with aseptic technique</li> </ul>   | Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Patient record</li> <li>• Antiseptic</li> <li>• Eye Drape</li> </ul>   |
| Assist the Procedure | <ul style="list-style-type: none"> <li>• Hand washing, gowning and gloving using aseptic technique and proper sterile attire.</li> <li>• Assist doctor and wait for the next instructions.</li> </ul> <p><u>Steps (Perform by doctor)</u></p> <ol style="list-style-type: none"> <li>1) 360-degree conjunctival peritomy done.</li> <li>2) Cornea incision near limbus, uveal tissue removed.</li> <li>3) Bleeding secured using Adrenaline-soaked ribbon gauze and diathermy.</li> <li>4) Cloxacillin powder 1000mg was put in the sclera cavity.</li> <li>5) Sclera and conjunctiva closed using interrupted absorbable suture 7/0</li> <li>6) Ointment antibiotic applied</li> <li>7) Eye padding and elastic adhesive bandage.</li> </ol> |                                   | <ul style="list-style-type: none"> <li>• OT gown</li> <li>• Sterile glove</li> </ul> <p><u>Steps (Hand over by AMO)</u></p> <ol style="list-style-type: none"> <li>1) Conjunctival forceps and scissors</li> <li>2) Cornea scissors and forceps with Bunge evisceration spoon</li> <li>3) Ribbon gauze soaked with adrenaline and diathermy</li> <li>4) Cloxacillin powder 1000mg</li> <li>5) 7/0 absorbable suture</li> <li>6) Ointment antibiotic</li> <li>7) Eye pad and elastic adhesive bandage</li> </ol> |

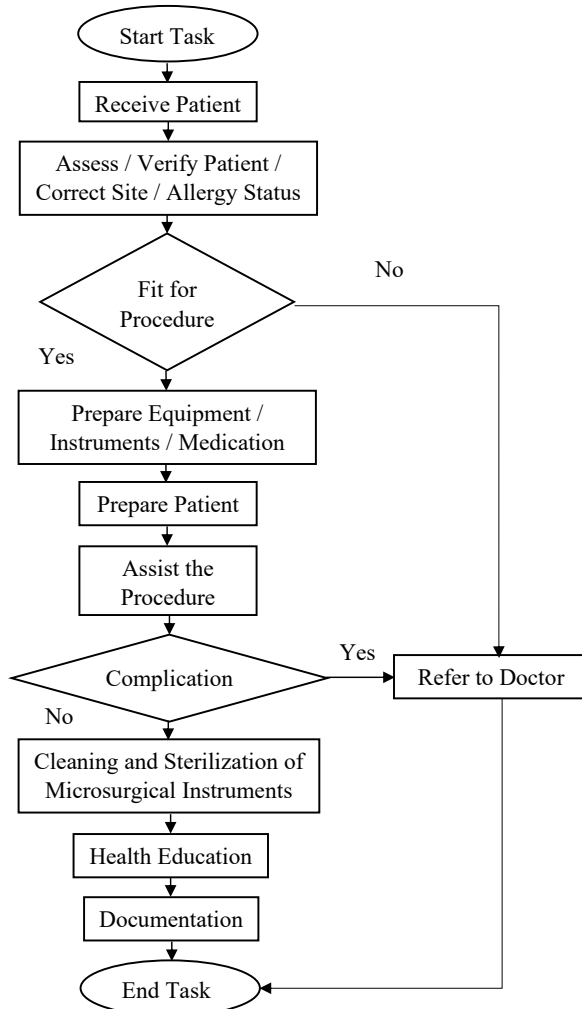
|  |   |   |   |
|--|---|---|---|
| Cleaning And Sterilization of Microsurgery Instruments | Refer to Cleaning and sterilization of microsurgery instruments guideline.  | Policies and Procedure on Infection Prevention and control, MOH, 2018 (3 <sup>rd</sup> edition) | Refer to Cleaning and sterilization of microsurgery instruments guideline.                        |
| Health Education                                       | <ul style="list-style-type: none"> <li>• Observe side effects / complications</li> <li>• Emphasize on follow up compliance</li> </ul> |   |   |
| Documentation  | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>  | Safe Surgery Safe Life (SSSL)   | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> <li>• SSSL Form</li> </ul> |

## REFERENCES

- Enucleation and Evisceration: What to Expect.* (2018, September 17). Eyerounds.org. Retrieved May 29, 2023, from <http://eyerounds.org/cases/279-anophthalmic-socket.htm>
- Johnson, T. E. (2020). *Anophthalmia: the expert's guide to medical and surgical management.* Springer.
- Yen, M. T., & American Academy of Ophthalmology. (2012). *Surgery of the eyelids, lacrimal system, and orbit.* Oxford University Press in Cooperation With The American Academy Of Ophthalmology.

**ENUCLEATION SURGERY**

|                           |  |
|---------------------------|--|
| <b>INTRODUCTION</b>       | Enucleation involves the surgical removal of the entire eye globe while preserving the conjunctiva, extraocular muscles, orbital fat, and optic nerve.   |
| <b>SCOPE</b>              | <ul style="list-style-type: none"> <li>• The procedure will be assisted by a privileged Assistant Medical Officer (AMO).</li> <li>• All patient with ocular condition requiring enucleation.</li> </ul>  |
| <b>SPECIFIC OBJECTIVE</b> | <ul style="list-style-type: none"> <li>• Advance intraocular tumour.</li> <li>• Severe globe injury without visual potential.</li> <li>• Painful Blind Eye.</li> <li>• Donor eye procurement.</li> </ul> |

**WORKFLOW**

| WORK INSTRUCTION  |  |   |  |
|---|--|---|--|
| ACTIVITY  | WORK PROCESS   | STANDARD  | REQUIREMENT  |
| Receive Patient   | <ul style="list-style-type: none"> <li>Register patient particulars in patient's record book.</li> </ul>   | Malaysian Patient Safety Goal 2.0   | <ul style="list-style-type: none"> <li>Patient appointment card / record</li> <li>Record book / census</li> </ul>  |
| Assess / Verify Patient / Correct Site / Allergy Status | <ul style="list-style-type: none"> <li>Verify correct patient.</li> <li>Verify correct site.</li> <li>Verify correct procedure.</li> <li>Verify allergy status</li> <li>Ensure written consent has been taken.</li> </ul>  | <p><i>Manual Arahan Kerja</i></p> <p>Safe Surgery Safe Life (SSSL)</p> <p>Malaysian Patient Safety Goal 2.0</p> | <ul style="list-style-type: none"> <li>Safe Surgery Safe Life (SSSL) Form</li> <li>Operation Theatre (OT) list</li> <li>Signed consent form</li> </ul>   |
| Prepare Instruments / Equipment / Medication            | <ul style="list-style-type: none"> <li>Make sure diathermy machine works perfectly.</li> <li>Prepare complete &amp; sterile enucleation set.</li> <li>Prepare supplementary instruments</li> <li>Prepare solutions.</li> <li>Prepare disposable item.</li> <li>Verify correct medication.</li> </ul> |   | <ul style="list-style-type: none"> <li>Diathermy machine.</li> <li>Enucleation Set.<br/><b>*Refer Appendix 15</b></li> <li>Supplementary instruments               <ol style="list-style-type: none"> <li>Cautery cable and forceps</li> <li>Solutions                   <ol style="list-style-type: none"> <li>Antiseptic</li> <li>Sterile water</li> </ol> </li> <li>Disposable item                   <ol style="list-style-type: none"> <li>Dressing set</li> <li>Eye drape</li> <li>4/0 or 5/0 non-absorbable suture</li> <li>6/0 absorbable suture</li> <li>Syringes &amp; needles</li> <li>Sterile gauze</li> <li>Cotton bud</li> <li>Medicated paraffin gauze</li> <li>Absorbent pads</li> </ol> </li> <li>Medication</li> </ol> </li> </ul> |

|                      |   |                                   |   |
|----------------------|---|-----------------------------------|---|
|                      | <ul style="list-style-type: none"> <li>• Check medication expiry date.</li> <li>• Verify correct implant.</li> <li>• Check implants expiry date.</li> </ul>   |                                   | <ul style="list-style-type: none"> <li>i. Adrenaline 1mg/ml</li> <li>• Implant</li> <li>i. Orbital implants</li> <li>ii. Conformer</li> </ul>   |
| Prepare Patient      | <ul style="list-style-type: none"> <li>• Verify correct patient.</li> <li>• Inform the patient about the procedure.</li> <li>• Prepare patient in supine position.</li> <li>• Clean and drape patient's eye with aseptic technique</li> </ul>   | Malaysian Patient Safety Goal 2.0 | <ul style="list-style-type: none"> <li>• Patient record</li> <li>• Antiseptic</li> <li>• Eye Drape</li> </ul>   |
| Assist the Procedure | <ul style="list-style-type: none"> <li>• Hand washing, gowning and gloving using aseptic technique and proper sterile attire.</li> <li>• Assist doctor and wait for the next instructions.</li> </ul> <p><u>Steps (Perform by doctor)</u></p> <ol style="list-style-type: none"> <li>1) Conjunctiva peritomy</li> <li>2) Isolation of all recti muscle.</li> <li>3) Introduce enucleation spoon to enucleate the eyeball.</li> <li>4) Secure all bleeding with ribbon gauze soaked with Adrenaline and diathermy.</li> <li>5) Introduce orbital implant into socket.</li> </ol> |                                   | <ul style="list-style-type: none"> <li>• OT gown</li> <li>• Sterile glove</li> </ul> <p><u>Steps (Hand over by AMO)</u></p> <ol style="list-style-type: none"> <li>1) Conjunctival forceps and scissors</li> <li>2) 4/0 or 5/0 non-absorbable suture and conjunctival scissors</li> <li>3) Enucleation spoon and enucleation scissor</li> <li>4) Ribbon gauze soaked with Adrenaline and diathermy</li> <li>5) Correct size of orbital implant</li> </ol> |

|  |   |   |  |
|--|---|---|--|
|  | 6) Wound closure layer by layer.<br>7) Placement of conformer<br>8) Eye padding and elastic adhesive bandage.                         |   | soaked in antibiotics<br>6) 6/0 absorbable suture<br>7) Conformer<br><br>8) Eye pad and elastic adhesive bandage |
| Cleaning And Sterilization of Microsurgery Instruments | Refer to Cleaning and sterilization of microsurgery instruments guideline.  | Policies and Procedure on Infection Prevention and control, MOH, 2018 (3 <sup>rd</sup> edition) | Refer to Cleaning and sterilization of microsurgery instruments guideline.                                       |
| Health Education                                       | <ul style="list-style-type: none"> <li>• Observe side effects / complications</li> <li>• Emphasize on follow up compliance</li> </ul> |   |  |
| Documentation  | <ul style="list-style-type: none"> <li>• Record procedure</li> </ul>  | Safe Surgery Safe Life (SSSL)   | <ul style="list-style-type: none"> <li>• Procedure book / census.</li> <li>• SSSL Form</li> </ul>                |

## REFERENCES

- Johnson, T. E. (2020). *Anophthalmia: the expert's guide to medical and surgical management*. Springer.
- Large, M., Andrews, D., Babidge, N., Hume, F., & Nielssen, O. (2008). Self-Inflicted Eye Injuries in First-Episode and Previously Treated Psychosis. *Australian & New Zealand Journal of Psychiatry*, 42(3), 183–191. <https://doi.org/10.1080/00048670701827259>
- Murphy, M., Nathan, M., Lee, E., Parsons, B., & Gunasekera, L. (2006). *Oedipism: Auto-enucleation in a schizophrenic patient*. <https://doi.org/10.1017/s0790966700009988>
- Teutsch, S. M., Mccoy, M. A., R Brian Woodbury, Welp, A., & And, E. (2016). *Making eye health a population health imperative: vision for tomorrow*. The National Academies Press.

## APPENDICES

### Appendix 1: Toilet and Suturing (T&S) Set

1. Sterilizing case with silicone mat to contain following instruments size: 265 x 160 x 25mm
2. Elsnig fixation forceps, 1 x 2 angled teeth
3. McPherson tying forceps, 5mm long smooth jaws for 8-0 to 11-0 suture, straight
4. Straight corneal tying forceps, 1 x 1 pierce teeth of 0.1mm very delicate
5. Castroviejo needle holder
6. Strabismus forceps
7. Barraquer eye specula for children
8. Barraquer eye specula adults
9. Eye scissors, straight, 10cm
10. Westcott scissors, curved blunt tips
11. Surgical Blade handle
12. Eye scissors, blunt straight

### Appendix 2: Incision and curettage (I&C) Set

1. Meyerhoefer chalazion curette
  - Size: 1.0mm diameter
  - Size: 1.5mm diameter
  - Size: 2.0mm diameter
  - Size: 2.5mm diameter
  - Size: 3.0mm diameter
2. BP handle no.3
3. Hunt chalazion forceps
4. Bonaccolto strabismus forceps
5. Eye scissors, 9cm, straight
6. Kidney dish 20.6 x 9.5 x 3.8cm w/o cover
7. Gallipot, 6 oz,
8. Sterilizing case with silicone mats to contain above instruments, 265 x 160 x 25mm
9. Baird chalazion forceps
10. Desmarres chalazion forceps 20mm

### Appendix 3: Pterygium Set

1. Eye speculum, Libermann, k wire, adjustable
2. Iris forceps, 1 x 2 teeth, curved, 100mm, 4"
3. Eye dressing forceps, straight, s/steel, 100mm, 4"1mm tip
4. Bishop-Harmon dressing forceps, straight, 0.7mm
5. Barraquer needle holder, curved without catch
6. St Martin suture forceps, straight, 1 x 2 teeth, stainless steel, 75mm, 3"
7. Bishop-Harmon anterior chamber irrigator, includes 19G gauge angled cannula, adaptor and silicone bulb complete
8. Vannas micro scissors, straight sharp / sharp points 80mm
9. Iris scissors, straight, sharp / sharp points, 110mm, 4 1/4"
10. Tooke corneal knife, smooth, 3 x 18mm. blade, 119mm.
11. Bard-Parker handle, size 3
12. Kidney tray, 250 mm, 10"
13. Gallipot, stainless steel, capacity of 2 ozs.
14. Gallipot, stainless steel, capacity of 4 ozs.
15. Sponge holder forceps, 18cm
16. Plastic sterilizing case with silicon mats 265 x 160 x 25mm for 10 to 15 instruments

### Appendix 4: Cataract Set (Phacoemulsification)

1. Kratz-Barraquer wire speculum with open blades, large
2. Phaco diamond knife double lancet with blunt sides, 2.75mm wide
3. Single edge diamond knife, 30 deg. 1mm wide
4. Super sharp sterile, disposable (pk/6) #75-15 green, 15°, 5.0mm
5. Chuck handle #3K round 10cm
6. Bishop-Harmon anterior chamber irrigator include 19 gauge angled cannula, adaptor and blue silicone bulb complete
7. Hartmann mosquito forceps extra delicate 100mm, long straight
8. Halsted mosquito forceps, delicate 5 3/4" (145mm) curved
9. Jaffe-bechert lens nucleus rotator blunt forked, tip angled at 9mm
10. Kuglen iris hook and lens manipulator, angled
11. Westcott tenotomy scissors curved, blunt tips,
12. Stern-Gills scissors, extra thin 10mm long blades, sharp points, angled forward
13. Harms-colibri forceps, very delicate 1 x 2 teeth 0.12mm with tying platform
14. Castroviejo suturing forceps 1 x 2 teeth with 0.12mm, tying platform
15. Elsching fixation forceps 1x2 teeth angled teeth
16. Bonaccolto conjunctiva forceps longitudinally serrated jaws with cross serration at tips 12mm wide
17. Tennant tying forceps with guide pin extra delicate smooth jaws with 6mm long platform for 9-0 to 11-0 sutures, straight
18. Tennant tying forceps with guide pin extra delicate smooth jaws with 6mm long platform for 9-0 to 11-0 sutures, curved
19. Castroviejo needle holder standard jaws without lock, straight
20. Katena needle holder extra delicate jaws without lock, curved
21. McIntyre anterior chamber cannula 30G
22. Air injection cannula 27G

23. Katena instrument caddy double level, with removable lid. 325 x 265 x 42mm
24. Simcoe I/A cannula 23G
25. Simcoe cortex extractor cannula smooth closed tip with side opening facing into curved 23 gauge (21mm)
26. Rampley serrated jaw, box joint, straight, 25cm
27. Gallipot, 6 oz,
28. Kidney dish 20.6 x 9.5 x 3.8cm
29. Lieberman speculum K-wire

### Appendix 5: Extra Capsular Cataract Extraction (ECCE) Set

1. Bishop-Harmon anterior chamber irrigator includes 19 gauge angled cannula, adaptor and blue silicone bulb, complete
2. Baby Jones towel clamp cross-action 2 1/4" (55mm) long
3. Hartmann mosquito forceps 100mm long straight
4. Barraquer wire speculum large
5. Barraquer wire speculum large
6. Chuck handle #3K round 10cm
7. Castroviejo corneoscleral scissors small blades right
8. Castroviejo corneoscleral scissors small blades left
9. Westcott tenotomy scissors curved blunt tips
10. Westcott stitch scissors very sharp pointed tips
11. Stern-Gills scissors, extra thin 10mm long angled forwards
12. Castroviejo caliper, 20mm spread straight
13. Bonaccolto conjunctiva forceps longitudinally serrated jaws with cross serration at tips
14. Elschning forceps
15. Harms-Colibri forceps, very delicate 1 x 2 teeth, 0.12mm with tying platform
16. Step diamond knives B=1.00, L=3.00, D=0.20, A=45°, s=1.00
17. Bishop-Harmon tissue forceps 1 x 2 teeth standard
18. Castroviejo suturing forceps 1 x 2 teeth with tying platform 0.12mm
19. McPherson tying forceps 5mm long smooth jaws for 8-0 to 11-0 sutures, straight
20. McPherson tying forceps 5mm long smooth jaws for 8-0 to 11-0 sutures, angled
21. Kelman-McPherson forceps angled very delicate, 7.5mm long smooth jaws
22. Utrata capsulorhexis forceps very delicate grasping tips & extremely thin 11mm long shanks round handle
23. Blaydes lens holding forceps
24. Sinsky II lens manipulating hook 0.2mm diam blunt tip angled
25. Kuglen iris hook and lens manipulator push-pull model angle d
26. Katena needle holder extra delicate jaws curved with lock
27. Castroviejo needle holder standard jaws straight without lock
28. Morrison lens loop and probe very thin
29. Kansas nucleus vectis, solid used as a "cutting block" for Kansas nucleus bisector and trisector for right-handed surgeons
30. Castroviejo blade holder
31. Air injection cannula, angled 5mm from tip, 27 gauge
32. McIntyre anterior chamber cannula smooth blunt tip 26 gauge, angled
33. Jensen posterior capsule polisher carbide impregnated on posterior surface of olive tip front opening, gently curved 23 gauge

34. Simcoe irrigating-aspirating cannula original model with aspiration thorough tubing hub and irrigation. Luer-lock hub. 23-gauge thin wall, 15mm long curved tubes, with 0.3mm dia. aspirating port facing into curve and slightly shorter irrigating tip with 45 angled front opening
35. Gallipot, 6 oz,
36. Kidney dish 20.6 x 9.5 x 3.8cm
37. Rampley serrated jaws, box joint, straight 25cm
38. Culler iris spatula sterilizing silver blade 1mm wide
39. Hartmann mosquito forceps 100mm long straight
40. Graefe hook, small
41. Vannas scissors, straight
42. Eye scissors, straight and sharp
43. Eye scissors, straight and blunt
44. Bucher-Kansas trisector
45. Tooke knife

#### Appendix 6: Intracapsular Cataract Extraction (ICCE) Set.

1. Bishop-Harmon anterior chamber irrigator includes 19 gauge angled cannula, adaptor and blue
2. Silicone bulb, complete
3. Baby Jones towel clamp cross-action 2 1/4" (55mm) long
4. Hartmann mosquito forceps 100mm long straight
5. Barraquer wire speculum large
6. Chuck handle #3K round 10cm
7. Castroviejo corneoscleral scissors small blades right
8. Castroviejo corneoscleral scissors small blades left
9. Westcott tenotomy scissors curved blunt tips
10. Westcott stitch scissors very sharp pointed tips
11. Stern-Gills scissors, extra thin 10mm long angled forwards
12. Castroviejo calliper, 20mm spread straight
13. Bonaccolto conjunctiva forceps longitudinally serrated jaws with cross serration at tips
14. Elschnig forceps
15. Harms-Colibri forceps, very delicate 1 x 2 teeth, 0.12mm with tying platform
16. Step diamond knives B=1.00, L=3.00, D=0.20, A=45°, s=1.00
17. Bishop-Harmon tissue forceps 1 x 2 teeth standard
18. Castroviejo suturing forceps 1 x 2 teeth with tying platform 0.12mm
19. McPherson tying forceps 5mm long smooth jaws for 8-0 to 11-0 sutures, straight
20. McPherson tying forceps 5mm long smooth jaws for 8-0 to 11-0 sutures, angled
21. Kelman-McPherson forceps angled very delicate, 7.5mm long smooth jaws
22. Utrata capsulorhexis forceps very delicate grasping tips & extremely thin 11mm long shanks round handle
23. Blaydes lens holding forceps
24. Sinskey II lens manipulating hook 0.2mm diam blunt tip angled
25. Kuglen iris hook and lens manipulator push-pull model angle d
26. Katena needle holder extra delicate jaws curved with lock
27. Castroviejo needle holder standard jaws straight without lock
28. Morrison lens loop and probe very thin

29. Kansas nucleus vectis, solid used as a "cutting block" for Kansas nucleus bisector and trisector for right-handed surgeons
30. Castroviejo blade holder
31. Air injection cannula, angled 5mm from tip, 27 gauge
32. McIntyre anterior chamber cannula smooth blunt tip 26 gauge, angled
33. Jensen posterior capsule polisher carbide impregnated on posterior surface of olive tip front opening, gently curved 23 gauge
34. Simcoe irrigating-aspirating cannula original model with aspiration thorough tubing hub and irrigation. Luer-lock hub. 23 gauge thin wall, 15mm long curved tubes, with 0.3mm dia. aspirating port facing into curve and slightly shorter irrigating tip with 45 angled front opening
35. Katena instrument caddy double level, with removable lid. 325 x 265 x 42mm
36. Gallipot, 6 oz,
37. Kidney dish 20.6 x 9.5 x 3.8cm
38. Rampley serrated jaws, box joint, straight 25cm
39. Culler iris spatula sterilizing silver blade 1mm wide
40. Hartmann mosquito forceps 100mm long straight
41. Super blade 45° (12/pk)
42. Graefe hook, small
43. Vannas scissors, straight
44. Eye scissors, straight and sharp
45. Eye scissors, straight and blunt
46. Bucher-Kansas trisector
47. Tooke knife

### Appendix 7: Lid Set

1. Tooth forcep
2. Lid guard
3. Bard parker hande
4. Scapel blade No 15
5. Needle holder
6. Wescott scissor
7. Bulldog clamp
8. Desmarres
9. Skin hook retractor
10. Straight scissor
11. Steven scissor
12. Wright needle (ptosis)

## Appendix 8: Descemet Stripping Automated Endothelial Keratoplasty (DSAEK) Set

1. Sterilization box in aluminum
2. Adjustable Eye Speculum (open curved blades)
3. Straight Eye Scissor
4. Caliper
5. Rycroft irrigation Cannula
6. Bishop-Harmon Irrigating Cannula
7. Irrigation Port 0.9-mm
8. Price Hook 0.7-mm tip
9. Corneal marker (8.0-mm, 8.5-mm, 9.0-mm diameter)
10. "S" Marker (for DSAEK)
11. Bonn-Moria Forceps (0.18-mm teeth with platforms)
12. Busin Forceps (20G, 23G)
13. Barraquer-De Laage needle holder, non-locking
14. 90° Spatula (for Keratoplasty)
15. Busin Glide Spatula
16. Tying Forceps Straight
17. Tying Forceps Curved
18. Barraquer-Troutman Forceps (0.12-mm oblique teeth, "colibri" type)
19. Bonn Forceps (0.12-mm teeth)
20. Vannas scissors

## Appendix 9: Penetrating Keratoplasty (PK) Set

1. Sterilization box in stainless steel
2. Adjustable Speculum (open curved blades)
3. Straight Eye Scissor
4. Katzin Scissor (Clockwise)
5. Katzin Scissor (Counter-clockwise)
6. Vannas scissors
7. Westcott Type Stitch Scissors
8. Barraquer-De Laage needle holder, non-locking
9. Bishop-Harmon Irrigating Cannula
10. Rycroft irrigation Cannula
11. Maloney Keratometer
12. Lowa P.K. Press Punch
13. Teflon Block
14. Tying Forceps Straight
15. Tying Forceps Curved
16. Conjunctiva Forceps
17. Tooth Forceps
18. Polack Double Corneal Forceps Colibri Style
19. Barraquer-Troutman Forceps (0.12-mm oblique teeth, "colibri" type)
20. Bonn Forceps (0.12-mm teeth)
21. Viscoelastic Injection Cannula
22. Schaedel Towel Clamp
23. Serrefine

24. Blade Holder
25. SFO Cannula dual current
26. Radial Marker
27. Caliper
28. Paton Double-Ended Spatula

#### **Appendix 10: Dacryocystorhinostomy (DCR) Set**

1. Kerrison rongeur
2. Bone rongeur
3. Knapp (cat's paw) retractor
4. Bowman's probe
5. Bone mallet & chisel
6. Punctum dilator
7. Desmarres
8. Freer periosteal elevator
9. Suction tube
10. Bard parker handle
11. Scapel blade No.15
12. Needle holder
13. Wescott scissor
14. Bulldog clamp
15. Tooth forceps

#### **Appendix 11: Orbitotomy Set**

1. Desmarres
2. Bone mallet & chisel
3. Orbital retractor
4. Freer periosteal elevator
5. Stevens mousses scissor
6. Skin hook retractor
7. Artery forcep
8. Suction tube
9. Bard parker handle
10. Scapel blade No.15
11. Needle holder
12. Wescott scissor
13. Bulldog clamp
14. Tooth forcep

## Appendix 12: Strabismus Set

1. Lieberman Speculum large
2. Lieberman Speculum small
3. Lieberman Infant Speculum
4. Hartmann Mosquito Forceps, curved (2)
5. Helveston Barbie" Retractor
6. Helveston "Big Barbie" Retractor
7. Helveston Great Big Barbie" Retractor
8. Helveston Teaser Hook, 6mm (3)
9. Helveston Finder Hook, large
10. Helveston Finder hook, small
11. Helveston Muscle hook, 8mm
12. Helveston Muscle Hook, 10mm
13. Helveston Muscle Hook, 12mm
14. Helveston Scleral Ruler
15. Castroviejo Callipers, straight
16. Westcott Tenotomy Scissors
17. Westcott Stitch Scissors
18. Bonn Forceps, 0.12mm
19. Moody Fixation Forceps, left
20. Moody Fixation Forceps. right
21. Lester Fixation Forceps, 2x3 (3)
22. Helveston Tying Forceps (2)
23. Rychwalski Muscle Hook, with grooves
24. Castroviejo Needle Holder, straight, w/lock
25. Barraquer Needle Holder, curved, w/lock
26. Bishop Hamon AC Irrigator
27. Sterilizing Case, double. aluminium

## Appendix 13: Trabeculectomy Set

1. Bishop-Harmon A/C Irrigator
2. Hartmann Mosquito Forceps, straight
3. Eye Speculum, adjustable
4. Eye Scissors, straight
5. Sarkisian-Westcott Scissors, small blades
6. Westcott Tenotomy Scissors
7. Vannas Scissors, 7mm, curved
8. McPherson-Westcott Stitch Scissors
9. Fechtner Conjunctiva Forceps (2)
10. Colibri Forceps, 0.12mm teeth
11. Bishop-Harmon Forceps
12. Castroviejo Caliper, straight
13. Kelly's / Khaw Trabeculectomy Punch
14. Barraquer Needle Holder, curved
15. Micro Tying Scissors
16. Sterilizing Case, aluminum

**Appendix 14: Vitrectomy Set**

1. Fishkind-Castroviejo Speculum
2. Halsted Mosquito Forceps, straight (2)
3. Eye Scissors, straight
4. Bishop-Harmon A/C Irrigator
5. Stevens Scissors, straight
6. Stevens Scissors, curved
7. Westcott Tenotomy Scissors
8. Westcott Stitch Scissors
9. Graefe Muscle Hook #2
10. Gass Retinal Detachment Hook
11. Schocket Scleral Depressor
12. Castroviejo Caliper, straight
13. Watzke Sleeve Spreading Forceps
14. Bonaccolto Conjunctiva Forceps
15. Nugent Utility Forceps, serrated
16. Castroviejo Forceps, 0.12mm
17. Castroviejo Forceps, 0.3mm
18. Castroviejo Needle Holder, curved, w/lock
19. Castroviejo Needle Holder, straight
20. McPherson Tying Forceps, straight
21. Sterilizing Case, aluminum

**Appendix 15: Evisceration Set / Enucleation Set**

1. Lester-Burch eye speculum
2. Bunge evisceration spoon, large
3. Bunge evisceration spoon, small
4. Wells Enucleation spoon
5. Graefe muscle hook #2
6. Stevens Scissors, straight
7. Enucleation scissors, strong curve
8. Tissue forceps
9. Halsted mosquito forceps, curved



STANDARD PRACTICE  
GUIDELINES



Assistant Medical Officers Services Section  
Ministry Of Health, Malaysia

e ISBN 978-967-18696-4-2



9 789671 869642

STANDARD PRACTICE  
GUIDELINES