

## **SOP for Cornea Retrieval**

### **Personnel authorized to retrieve eyes/corneas**

- A registered medical practitioner trained in enucleation/ excision from an Eye Bank /Training Centre is only allowed to retrieve eyes/ corneas from the donor after satisfying self that life is extinct, in the absence of a death certificate.
- Trained Eye Bank Technicians are also allowed to remove eyes provided death has been certified or verified by a qualified doctor/medical practitioner.

### **Pre-Retrieval Procedure**

- Eye Bank team should carry only validated sterile instruments for retrieval.
- Eye Bank Team on arrival at the location should locate the next of kin and convey condolence and obtain death certificate.
- In the absence of a death certificate the registered medical practitioner should satisfy self that life is extinct.
- The eye bank team should obtain consent on a consent form from the legal custodian of the donor.
- The donor should be identified either through a tag or through the next of kin
- Gross physical examination should be conducted
- Eye bank team should look out for needle marks on the arm, skin lesions, Ulcers/ gangrene in exposed areas
- Ocular examination should be conducted with a penlight
- Medical records/ Medical information should be obtained as per guidelines
- Information for hemodilution should be obtained as per guidelines
- Social history of the donor should be obtained wherever possible from the next of kin
- Once all the above are completed the retrieval can be started

### **Screening of donors**

#### **Contraindications for Retrieval:**

- Active viral Hepatitis
- Acquired immunodeficiency syndrome (AIDS) of HIV
- Active viral encephalitis or encephalitis of unknown origin
- Creutzfeldt- Jakob disease
- Rabies

## **Donor Age**

Since no definite relationship has been established between the quality of donor tissue and age the upper and lower age limit is left to the discretion of the medical director.

## **Interval between death, enucleation, & excision**

- It is generally recommended that corneal preservation should occur as soon as possible after death.
- All time intervals for each donor, e.g. the time of death to the time of enucleation and preservation or the time to corneal excision, should be recorded.
- If the donor has been refrigerated prior to enucleation or in situ corneal excision, this information is to be recorded.

## **Documentation forms required for all donor recoveries**

- Donor call- initial information sheet
- Consent form
- Donor information sheet
- Eye donor medical particulars
- Hemodilution Assessment sheet

## **Consent for Ocular Tissue Recovery**

- Documentation of consent should be consistent with existing policy as prescribed by EBAI.
- Consent should be obtained from the correct individual according to hierarchy of persons
- Consent should clearly authorize recovery of the specific tissues for which the recovery is planned.
- Consent should give authorization to obtain blood specimen for infectious disease screening

## **Donor face cleaning**

- The following steps should be performed only when gross debris are observed on the donor's face
- Don non-sterile examination gloves.
- Irrigate the donor's eyes and face with a sufficient quantity of sterile balanced salt solution to remove all visible debris from the eyes and to moisten the face.
- Use non-sterile 4x4 inch cotton squares to remove residual debris from the moistened face.
- Remove the non-sterile exam gloves and place them in an appropriate biohazard waste container.

### **Application of 5% Povidone-Iodine Solution Preparation**

- Use a Cotton Tip Applicator (CTA) to open the upper lid and roll the lid margin and lashes away from the globe.
- Use a second CTA dipped in 5% povidone-iodine solution to scrub the upper lid margin and lashes one time across in a circular motion for approximately 20 seconds.
- Next, the same procedure is repeated for the lower lid
- Repeat the scrubbing of the upper and lower lid margin and lashes two more times with fresh CTAs.

### **Conjunctiva Prep**

- Dip a cotton tipped applicator (CTA) in the 5% povidone-iodine solution and sweep first the lowerconjunctival fornix & then the upper fornix from the lateral canthus towards the nose.

### **Globe Prep**

- Fill the sterile with approximately 1.5 cc of the 5% povidone-iodine solution.
- Use a CTA to gently roll back the upper lid & the lower lid and slowly drip approximately 0.75 cc of the 5% povidone iodine solution on the eye.

### **Lids and Face Prep**

- Prep the skin and facial area extending from the scalp to baseline of the nose by swabbing with folded sterile 4x4's gauge dipped in 5% povidone-iodine solution.
- Blot off the excess 5% povidone-iodine solution on the side of the plastic tray to avoid dripping on the work area.
- Repeat this procedure for each eye two more times, alternating eyes.
- It is very important that the povidone-iodine is left on the eyes and skin for at least three to five minutes before irrigating the eyes.

### **Sterile Field Preparation**

- Open the outside packages of two pair of sterile gloves then open the inner envelopes using aseptic technique and leaving gloves on their sterile fields.
- Open the outer wrap of the appropriate surgical instrument pack taking care to avoid contamination of the sterile field being created by touching anything other than the wrapper edges or reaching over the field.
- Carefully open and aseptically drop sterile 4x4 inch gauze squares, sterile cotton tipped applicators and sterile rubber bands on to the sterile portion of the outer wrap of the surgical instrument pack.
- Open the sterile eye drape, taking care to avoid contaminating the sterile field being created

- Label the eye jars or corneal storage media vials, loosen the caps to the top thread and place the jars or vials adjacent to a top corner of the instrument sterile field.
- Place labeled containers for blood and/ or vitreous samples near the sterile field along with hypodermic equipment and cosmetic restoration materials

### **Corneo scleral rim excision**

- Removal of the corneal-scleral rim requires rigid sterile technique employing accepted aseptic practice.
- The potential for endothelial cell damage, contamination and infection are greatly increased and this procedure therefore shall be performed by individuals specifically trained in in-situ retrieval
- Open the eyelids using a sterile cotton tipped applicator and insert a spring/wire speculum.
- Use small clawed forceps and iris or tenotomy scissors to lift and cut the conjunctiva at the limbus 360 degrees.
- The exposed sclera is carefully scrapped from the limbus outward with a scalpel blade (#11 or #15) to remove all remaining conjunctival tissue.
- Use a second scalpel with a #15 blade and small clawed forceps to make an incision through the sclera 2 mm to 4 mm from the limbus and parallel to the limbus approximately 5 mm in length.
- Care must be taken to cut all the way through the sclera without perforating the choroid as this would cause vitreous leakage which may cause collapse of the globe including the anterior chamber and compromise the cornea.
- Continue the scleral incision 360 degrees using corneal section scissors.
- Take great care to avoid perforating the choroid breaking into the anterior chamber or causing any deformation of the cornea's normal curvature.
- If the incision has been made properly, the corneal-scleral button should be attached to the ciliary body-choroid only at the scleral spur.
- Complete the corneal removal by using one pair of small forceps to hold the scleral rim stationary and a second set of small forceps or an iris spatula to gently push the ciliary body-choroid downward and away from the corneal-scleral button.
- Remaining adhesions should be pushed gently away from the corneal-scleral button working side to side and taking great care to avoid pulling on the cornea and creating folds.
- Do not contaminate the cornea by allowing it to touch the eyelids or other facial skin.
- Continue to hold the cornea by the scleral rim with the small smooth dressing forceps and aseptically transfer it to a labeled vial of storage media.

### **Post cornea Retrieval**

- Gently palpate the iris and pupil of each remaining posterior segment with a blunt instrument to rule out aphakia or pseudophakia. Insert eye caps in front of the remaining posterior poles and gently close the eyelids.
- Place the corneal media vials in an ice box to which ordinary ice (NOT DRY ICE) has previously been added.
- Discard all used disposables in a biohazard bag and all sharps in sharps container.
- Rewrap instruments for transport, cleaning and sterilization.
- Clean the work area with disinfectant solution.

#### **Procedure of Enucleation**

- Preparation of lids, conjunctiva & globe done as described before
- Conjunctivalperitomy done
- Four rectus muscles cut close to globe
- Optic nerve is cut at least  $\frac{1}{4}$  inch from globe
- Eyes are kept in Moist Chamber at 4 degrees C
- Artificial eyes are placed in the sockets

