

TRANSACTIONS OF THE OPHTHAMOLOGICAL SOCIETY OF NIGERIA: PROCEEDINGS OF THE 2023 ANNUAL OSN CONFERENCE AT RADISSON BLU HOTEL, IKEJA, LAGOS STATE

NAMED LECTURES

Okechukwu Memorial Lecture

Corneal Banking and Transplantation: Setup and How to Encourage People to Donate

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Being the text of the Okechukwu Memorial Lecture delivered during the 47th Annual Scientific Conference of the Ophthalmological Society of Nigeria on 30th August, 2023

SUMMARY

Corneal blindness is one of the most important preventable causes of blindness worldwide. India has a 3-tier eye banking system. Setting up an eye bank, requires government permission and certain certificates. Once an eye donation call is received, the cornea is collected after detailed history and examination with consent of relatives. Cornea tissue is collected by different methods and examined thoroughly in eye bank. The eye bank has the responsibility of training the nursing staff and paramedical staff of multispecialty hospitals. Awareness is created to encourage donation and eliminating myths. It is done by different modes. This review article provides a brief overview of the process of setting up an eye bank and promotional activities done by eye bank to encourage eye donation.

Key words – Corneal Blindness, Eye donation, Eye bank, Transplantation

INTRODUCTION

Corneal blindness is one of the most important preventable causes of blindness worldwide. It is preventable and reversible condition in many

situations. Corneal transplantation is the answer to this problem. We can get these corneas through eye banks. India has a 3-tier eye banking system consisting of Eye Bank Training centers, Eye Banks and Eyeball Collection centers. EBAI (Eye Banking Association of India) is the central regulatory body for eye banking in India.

Process of setting up an eye bank

Firstly, requires government permission and certain certificates. To do corneal transplantation, which is a form of organ donation and transplantation, the setup needs certification under HOTA (Human Organ Transplantation Act 1994). Meticulous paper work and maintaining proper records of eye banking activities makes the process easy.

Eye banking setup is controlled by National Program for Control of Blindness and Visual Impairment (NPCBVI) in India. Monthly reporting about the details of corneas retrieved and transplantation surgeries needs to be submitted to District Blindness Control Society (DBCS).

A functional eye bank setup has the following –

1. Dedicated 24x7 Vehicle (such as an ambulance) with driver.
2. An all-time active phone number with a telephone operator.
3. Team of doctor, nursing staff and technicians.
4. 2 sterile eyeball retrieval sets.

5. Ice box with corneal preservation medias
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 - a. McCarey-Kaufman (MK) medium
 - b. Cornisol / optisol
 - c. Moist Chamber
6. Fridge with temperature of 4 to 8°C with 3 compartments.
7. Association with Microbiology lab for serology.
8. Record keeper – Maintaining recipient waiting list register.

Advanced eye banking setup needs –

- i. Laminar air flow for making corneal buttons
- ii. Specular biomicroscopy - for grading the corneas depending on endothelial cell density. From optical to therapeutic grade

As soon as eye donation call is received done by relative of deceased / social worker, enquiry is done about the cause of death, time of death and place from where the call is made. Corneas can be retrieved only within 4 hours (in hot humid weather) to 6 hours (in cold temperate weather) after death. After reaching the location, the procedure is explained to the relatives and consent by the next of kin is obtained. Only after the consent is given by next of kin, we can proceed with eye donation. Donor blood samples are taken for serology to screen for HIV, HTLV, HCV, VDRL and HBsAg.

Pre-requisites before eye donation –

1. Consent by next of kin.
2. Death summary / certificate.
3. Time since death less than 6 hours.
4. Contraindications like blood-borne disorders, malignancy, infections, sepsis, meningitis, encephalitis, corneal pathologies, etc.

Cornea is collected in two forms – Full globe removal by enucleation and corneoscleral rim removal in situ. Cornea is then processed under laminar airflow flow. Gross examination is done under slit lamp and endothelial cell count is measured by specular microscope. According to the quality of cornea, it is used for optical, therapeutic or tectonic purposes. The ones which cannot be transplanted are used for research.

There are 2 types of keratoplasties which are performed – Full thickness Penetrating keratoplasty (PK) and lamellar keratoplasty (like DALK / DSEK / DMEK). Once the corneas are received, patient selection is done on the basis of patient profile - the emergent condition and age of the patient are the deciding factors.

Once eye bank is set, then working starts in the following ways. Eyeball collection, proper storage and processing are the main functions. Other important functions are maintaining waiting list for corneal transplantation patients and creating awareness about eye donation. Eye bank also has the responsibility of training the nursing staff and paramedical staff of multispecialty hospitals, so that they can play a pivotal role in counselling of critically ill patients and their relatives.

Awareness is created by lectures, rallies, posters and slogan competition, pasting stickers on local transport, street plays, radio and television interviews on eye donation and eliminating the myths related to organ donation. Cultural myths are big hurdle to donation. Convincing the close relatives of the deceased is the most difficult thing to do. This hurdle needs to be overcome by creating awareness and counselling. Giving someone the beautiful gift of sight after death is the most noble and holy thing that one can pledge for. People can be encouraged by felicitating the families of donors.

CONCLUSION

Creating awareness about eye donation and reducing burden of corneal blindness by doing corneal transplantation is a noble work. It is a social service that everyone should do.

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