ORIGINAL RESEARCH PAPER

Prosthodontics

EYES ARE THE MIRRORS OF THE SOUL – A CASE REPORT

KEY WORDS: Ocular Prosthesis, Stock iris, post enucleation deficit, ocular tray

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ABSTRACT

Eyes are generally the first features of the face to be noted. The disfigurement resulting from loss of eye can cause significant psychological as well as social consequences. Most patients experience significant stress, due primarily to adjusting to the functional disability caused by the loss and to societal reactions to the facial impairment. Replacement of the lost eye as soon as possible is necessary to promote physical and psychological healing for the patient and to improvesocial acceptance. Enucleation of the eye is therefore normallyfollowed by fabrication of an ocular prosthesis to improve esthetics. An ocular prosthesis is created to restore a more normal anatomical structure and the cosmetic defect created by these conditions in a person.This case report elaborates the technique for fabrication of custom-made sclera prosthesis for an atrophic eye socket.

INTRODUCTION:

An unfortunate absence or loss of an eye may be caused by a congenital defect, irreparable trauma, a painful blind eye, Sympathetic opthalmia or the need for histologicconfirmation of a suspected diagnosis. A congenital anomaly or pathology may necessitate an orbital evisceration or an orbital enucleation. The surgical procedure of evisceration is where the contents of the globe are removed, leaving the sclera intact. A more invasive procedure is enucleation where the entire eyeball is severed from the muscles and optic nerve. Exenteration, the most radical, involves removal of the contents of the orbit.[1]The psychological effects of losing an eye, however, are frequently more difficult to deal with. It is the duty of the maxillofacial prosthodontist to rehabilitate the social stigma of this patient and improve the psychological confidence of the patient by constructing an optimal artificial prosthesis.[2]

An ocular prosthesis is an artificial replacement for the bulb of the eye (eyeball). The eyeball, or the organ of sight, is contained in this cavity of the orbit, where it is protected from injury and moves with the aid of the ocular muscles. When the entire content of the orbit (including muscles fascia, eyelids, conjunctiva and the lacrimal apparatus) is removed, the artificial replacement is referred to as an orbital prosthesis.[3]

Paymen, Saunders and Goldberg in 1987 classified the surgical procedures for removal of the eye into 3 general categories: Evisceration, Enucleation and Ecenteration.[4]

- Evisceration: The contents of the globe are removed leaving the sclera intact.
- Enucleation: The entire eyeball is removed after severing the muscles and the optic nerve. This is the most common type of surgical removal of eye.
- Ecenteration: The entire contents of the orbit including the eyelids and the surrounding tissues are removed.

CASE REPORT:

A 33-year-old man reported to the Department of Oral and Maxillofacial Prosthodontics, Lenora Institute of Dental Sciences with a missing right eye and with a chief complaint of unaesthetic artificial eye prosthesis (Fig-1A, B). The patient gave a history of enucleation of the eye due to accidental trauma. On examination, a bare, fibrosed ocular socket covered by grafted skin was observed.

TECHNIQUE:

1. Primary impression making: First, petroleum jelly was applied to the eyebrows for the easy removal of the impression when it sets. Alginate was filled in to the syringe. Primary impression of right eye was made with alginate. Patient's head was slightly tilted backwards for better flow of alginate. Once completely set, boxing was done over the shape of the eye and plaster was poured on to it for easy removal of impression. The set impression is removed carefully by first retracting the lower eye lid and then from upper eyelid. The impression was washed under running water. Primary cast was poured with dental stone (Fig 2A).

2. Secondary impression making: A type II dental stone cast was poured in the primary impression after careful beading and boxing. A special tray was fabricated on the primary cast with 1mm thick wax spacer using self cure clear acrylic resin.Two escape holes were placed on either side of the tray and attach a handle with green stick compound (Fig 2 B,C). The special tray was finished and polished. Vaseline is applied to the defect area. Patient's head was tilted slightly backward. The tray was placed in position in the defect area.Polyvinyl silicone impression material with light bodied consistency loaded into the special tray and it was insertedinto the defect. Impression material was being inserted till the patient's upper eyelid projection matches the adjacent eye lid projection.

3. Master cast: The set impression was carefully removed and a two piece cast is poured. The set impression has two surfaces. One side that recorded the defect and the other side that recorded the upper eyelid. To pour the two piece cast, the impression was carefully beaded and boxed and cast was poured in stone on the defect side. Once the cast is set, without detaching the cast from the impression, beading and boxing wax was removed, indexing notches are placed,(Fig 3A). A layer of separating medium is

applied on the stone cast exposed. After the cast sets, the two pieces of the cast are carefully separated. One piece presenting the defect area and the other piece presenting the convex eye lid area (Fig 3 C).

4. Sclera wax pattern: wax pattern representing the sclera was now fabricated in this cast using modeling wax. A layer of separating medium was applied on either casts and molten wax is poured. Two casts are again kept in the position approximately to avoid distortion of wax pattern (Fig 3 B).

5. Sclera blank fabrication: The iris positioning from the wax pattern was transferred to the master cast and borders are marked. The wax pattern was smoothly polished and along with the first piece of the cast was placed in the lower compartment during flasking and a layer of separating medium was applied for easy removal. upper compartment is poured also poured in dental plaster. After dewaxing, a contour of outer surface of the prosthesis was presented in the second compartment.

6. Stock iris: Stock eye which matches the shade and size of the iris of the adjacent natural eye is selected.The scleral part is trimmed and the iris part is attached to the iris button created on the scleral blank (Fig 4 A).

7.Iris position trial: position of iris is made in relation to the contralateral iris and markings are done to know the center of the to place the iris button which is taken from the stock eye. Red veins are incorporated to get the natural look to the eye (Fig 4 B).

8.Insertion of prosthesis: At the time of insertion appointment, necessary adjustments are made based on patient's comfort and esthetics. During insertion patient was instructed to blink his eyes gently to make sure complete seating was done (Fig 4 C,D).

DISCUSSION:

Sanjayagouda B, Patil R,Meshramkar B H, Naveen N in 2008 stated that The fabrication of a custom acrylic resin eye provides a more precise and satisfactory aesthetic as an impression outlines the defect contents, with the iris and the sclera being fabricated and painted. However, the use of a stock prosthesis is usually advocated when time is limited and cost is a consideration. These can be easily modified in the dental surgery with available materials and if fabricated appropriately, it can provide a satisfactory fit and aesthetic appearance for patients. In the case of geriatric patients, such a prosthesis would be of immense use because of its relatively straightforward fabrication and the small number of visits required.

In this case report the iris is taken from the stock eye and insetred into the custom made eye for the patient which gives more esthetic iris appearance for the patient and easy method to fabricate.

POST INSERTION INSTRUCTIONS:

1. Patient was recalled for follow after 1 day, 3 days, 1 week,3 months and 6 months.
2. To avoid possible infections, the patient is instructed to remove the ocular prosthesis and disinfect periodically with water and soap and to reinsert.
3. Daily hygiene to be maintained using opthalamic solution as an irrigant.
4. Patient is instructed to have his ocular cavity examination once in a month or immediately when there is any irritation.

Follow up: Follow up had done for every 3 months,6 months and for 1 year and there were no complications seen.

Fig: 1

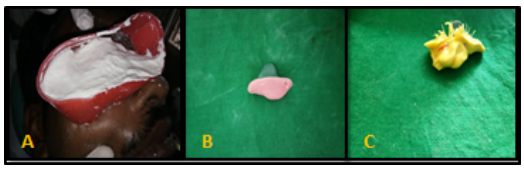

Fig:2

Fig:3

Fig:4

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