

# Prosthetic Management Of Patient With An Ocular Defect

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*Abstract: The loss of the facial structures can have a physical, social and psychological impact on those affected. Loss of the eyes may occur due to several reasons. In few patients, eyes are absent since birth whereas in other patients, eyes are removed surgically due to trauma, infection, malignancy and some other conditions which can make the patient physically and emotionally challenged. Maxillofacial prostheses which restore and replace stomatognathic and associated facial structures with artificial substitutes aim to improve the patient's aesthetics, restore and maintain health of the remaining structures and consequently provide physical and mental well being. Enucleation of the eye is therefore normally followed by fabrication of an ocular prosthesis to improve esthetics. The primary purpose of an ocular prosthesis is to maintain the volume of eye socket and create the illusion of a healthy eye and surrounding tissue. A custom ocular prosthesis is a good option when reconstruction by plastic surgery or use of osseo-integrated implants is not possible/ desired. This article describes a technique in which prosthetic rehabilitation of a patient with missing eye was carried out with a custom made ocular prosthesis.*

*Keywords: ocular defect, custom made ocular prosthesis, maxillofacial prosthesis.*

## I. INTRODUCTION

The loss or absence of an eye may be caused due to congenital defect, irreparable trauma, tumour, painful blind eye, sympathetic ophthalmia or the need for histological confirmation of a suspected diagnosis [1]. Surgical procedures in the removal of an eye can be broadly classified as: evisceration (where the contents of the globe are removed leaving the sclera intact), enucleation (most common, where the entire eyeball is removed after severing the muscles and the optic nerve) and exenteration (where the entire contents of the orbit including the eyelids and the surrounding tissues are removed) [2]. In such cases artificial eye prosthesis replaces the natural eye. The ocular prosthesis may be either readymade (stock eye) or custom made. The stock ocular prostheses are available in different sizes and shapes. Custom made ocular prosthesis offers better fit and comfort to the patient compared to the stock eye. These prostheses are fabricated according to the specific anatomy of the individual

defect hence there is an improvement in the adaptation of the prosthesis which helps in appreciable mobility, even distribution of pressure over the tissue bed, reduced tissue ulceration and improved facial contours.(3)

## II. CASE REPORT

A 45 year old female patient reported to the Department of Prosthodontics, Sharad Pawar Dental College, Sawangi(M), Wardha, Maharashtra with the chief complaint of poor esthetics due to missing right eye which she had lost in a domestic accident and wants to get it replaced.(fig 1) Following trauma, an enucleation was done. Treatment was planned after careful examination of the area of defect. The patient was explained about the procedure and its limitations. It was decided to make a custom-made ocular prosthesis which would enhance esthetic and functional results would be the best to meet the needs of the patient.



Figure 1

### III. PROCEDURE

- ✓ The patient's right eye socket was coated with a thin layer of Vaseline, Preliminary impression was made with irreversible hydrocolloid impression material and primary cast was poured. (Fig 2)
- ✓ Customized special tray was fabricated for making final impression and to capture the fine details of eye socket.(Fig 3)
- ✓ Patient was asked to do the eye movements to obtain functional impression of the defect.
- ✓ Final impression was made with polyvinyl siloxane impression materials. Final impression was poured in type III dental stone to obtain a sectional mould.(Fig 4)
- ✓ Sectional mould were separated and mould cavity was filled with molten wax to form a wax blank.(fig 5) Wax blank try in was done in patients eye to verify the proper fit and contouring of wax blank.
- ✓ Prefabricated iris was selected according to the shade and size of contra-lateral eye and iris positioning was done with the help of graph grid method and final try in was done (fig6)
- ✓ Flasking and curing was done to obtain an acrylized custom made ocular prosthesis.
- ✓ Different intrinsic and extrinsic stains were used to match the shade with natural eye of patient and obtain an appropriate results of prosthesis. (Fig 7)
- ✓ The patient was given instruction about wearing the prosthesis and it's home care protocol which includes (4)
  - Prosthesis should be handled with care and with clean hands.
  - Removal of Acrylic prosthesis during night is ideal.
  - It should be soaked in an antibacterial solution to kill the surface bacteria.
  - Routine polishing of prosthesis should be done every year to prevent deposition of protein and bacteria.
  - Children and those living in arid climates require polishing of the prosthesis every six month.

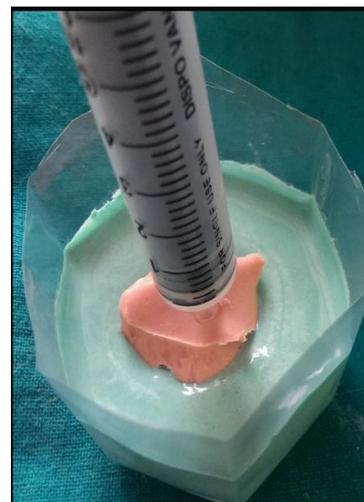


Figure 2



Figure 3

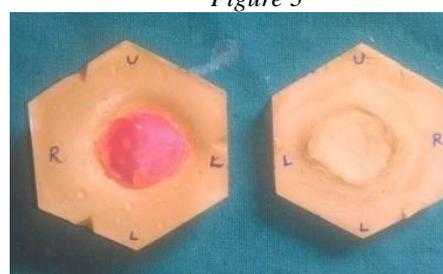


Figure 4



Figure 5



Figure 6



Figure 7

#### IV. DISCUSSION

The custom made ocular prosthesis conforms accurately to the socket as prosthesis fabrication is based on existing anatomy of the patient. According to Bumer et al, intimate contact between the ocular prosthesis and tissue bed is needed

to distribute even pressure, so a prefabricated prosthesis should be avoided which can irritate mucosa and act as a potential source of infection, which are minimized in custom made prosthesis.(5,6)

#### V. CONCLUSION

Custom-made ocular prosthesis has been a benefit to the patients who cannot afford for the implant replacements. The fit, esthetic and functional outcome of the custom prosthesis is far better than the stock ocular prosthesis Although the prosthesis is not functional, it definitely restores the self-esteem and has a positive psychological impact to stand within the society.

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