

## Case Report

### CUSTOMIZE OCULAR PROSTHESIS: A CASE REPORT

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#### ABSTRACT

Rehabilitation of an ocular defect is very important as it affect patient's psychological status. Thus fabrication of a prosthesis that is exact replica of natural eye is very important. In this case report we will discuss how to make customized ocular prosthesis with precision.

#### INTRODUCTION

The disfigurement associated with the loss of an eye can cause significant physical and emotional problems (Lubkin & Solan, 1990). The rehabilitation of a patient who has suffered the psychological trauma of an ocular loss requires a prosthesis that will provide the optimum cosmetic and functional result. Refinement in the details of custom made ocular construction has produced a superior restoration delivered more readily<sup>1</sup>.

Depending on the severity of the situation, there are 3 types of surgical management: Evisceration, enucleation, and exenteration. The ocular prosthesis can be given to patient who has lost ocular structures through evisceration or enucleation.<sup>[4,5]</sup> Basically, there are 3 types of acrylic resin ocular prosthesis: (i) Custom-fitted ocular prosthesis made from an

impression of the socket, (ii) stock (prefabricated) ocular prosthesis and (iii) stock ocular prosthesis modified by various methods<sup>2,3</sup>.

As the eye is an important part of the face so restoration of the defect with prosthesis that is accurate replica of the contralateral eye is very important. This case report describes how to accurately record tissue surface and create external surface accurately.

#### CASE REPORT:

A 7 year old child came to department of prosthodontics, govt. college of dentistry, Indore with defect in the left eye (fig 1). On examination mucosa was healthy. Sulcus depth was sufficient enough to retain the restoration. A custom-made ocular prosthesis was planned to meet the needs of the patient since it would result in better esthetics than a stock eye

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Fig 1: Pre op photograph



Fig 2: Taking primary impression with alginate



Fig 3: Wax conformer with positioned iris



Fig 4: Final impression with light body silicone



Fig 5: After flasking and dewaxing of wax conformer



Fig 6: Post op photograph after prosthesis insertion

shell. Custom tray was fabricated by duplicating it with stock eye. A thin tube was attached to serve as handle of the tray. Petroleum jelly was applied to the eyebrows and skin around to prevent impression material from sticking to eyelashes. Primary impression was made with irreversible hydrocolloid material (Fig 2). Patient was asked to perform movement of eye in all directions so as to proper flow of impression material. Cast was poured in two parts with the second part being poured after applying lubricant and making orientation grooves on the partially set first half. The tube was maintained as a

sprue to pour the wax pattern. After fabrication of wax conformer it is tried in patient's socket and checked for size, comfort, support, fullness, and retention by performing the functional movements. After wax conformer try in iris positioning was done. For positioning of iris markings were done on patients forehead for midline of the face, medial and distal canthus of the eye and medial and lateral borders of the iris of the healthy eye. These markings with calculated distance between them were transferred to the defect side and iris positioning was done according to these markings (Fig 3). After positioning of the iris

final impression was taken with light body polysiloxane impression material (Fig 4). Flasking and dewaxing (fig 5) was done and packing was done after matching of shade of sclera. After curing ocular prosthesis was removed from the flask without damaging it's mould. A layer of acrylic was removed from the external surface and characterization was done with the incorporation of red colored thread for duplication of blood vessels. Over this a layer of clear acrylic was applied and repacked again in the same mould and again curing was done. The properly finished and polished prosthesis was inserted in the socket (fig 6) after being disinfected and lubricated with an ophthalmic lubricant (Ecotears, Intas Pharmaceuticals Ltd, Ahmedabad, India) to maintain a tear film over the prosthesis and to improve eye movements. Minor adjustments were made at the time of delivery as per the patient's comfort and esthetics. Necessary instructions for cleaning, placement and removal of the prosthesis were given and the need for regular recall appointments was emphasized.

#### Discussion:

The ocular prosthesis is an artificial replacement for the bulb of the eye. After the surgeon enucleates the eye, prosthodontist is a person who comes into an act of providing the patient with an artificial eye to overcome the agony of losing an eye<sup>4</sup>. A well-made and properly made ocular prosthesis maintains its orientation when patient performs various movements.

#### CONCLUSION:

Since every socket differs in size and shape, it is obvious that an individually designed prosthesis, is needed to provide maximum comfort and restore full physiologic function of the accessory organs of the eye<sup>5</sup>. Fabrication of a custom-made prosthesis allows

infinite variations during construction and ensures better fit and patient satisfaction.

#### REFERENCES:

1. Kirti Somkuwar, Robin Mathai, Panambily Jose, Ocular prosthesis: Patient rehabilitation - A Case Reprot, People's Journal of Scientific Research, 2009;2:21-26.
2. Bartlett SO, Moore DJ, Ocular prosthesis: A physiologic system, J Prosthet Dent 1973;29:450-9.
3. Moore DJ, Firtell DN. A simplified method of measuring the diameter of the anterior segment of the eye, Am J Ophthalmol, 1969;67:769-70.
4. P. J. Doshi and B. Aruna, Prosthetic Management of Patient with ocular defect, The Journal of Indian Prosthodontic Society, 2005;5:37-38.
5. Faris Mohammed Shafi1, Nishna Pradeep, Sreekumar. Ocular prosthesis: a case report, Annals of Prosthodontics & Restorative Dentistry, July-September 2016;2:92-93.