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## Rehabilitation of Enucleated Eye with Ocular Prosthesis: A Case Report.

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### ABSTRACT

Sensory organs play a significant role in our lives. Loss of eye has a crippling effect on the psychology of the patient. Treatment of such cases includes implants and acrylic eye prosthesis. This clinical report describes the successful prosthetic rehabilitation of a patient who had undergone enucleation followed by radiation therapy and adjunctive chemotherapy to treat the primary diagnosis of squamous cell. This was accomplished with the help of a pre-fabricated eye shell having an acceptable fit, adaptation and esthetics.

**Keywords:** eye shell, ocular prosthesis, maxillofacial prosthesis

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## INTRODUCTION

Eyes are generally the first feature of face to be noticed. Removal of this organ either due to tumour, trauma or any other condition not only causes an unaesthetic look but also a loss of function and has a psychological effect on the patient. Ocular prosthesis should be provided as soon as possible for the psychological well-being of the patient [1].

Ocular prostheses can be either readymade (stock) or custom made. Stock eyes have some advantages including better mobility, even distribution of pressure due to equal movement thereby reducing incidence of ulceration, improved fit and adaptation, improved facial contours and esthetics. Stock eyes enhance tissue health by reducing potential stagnation spaces at the prosthesis tissue interface [2].

### Case Report

A 61-year-old male was referred to the Department of Prosthodontics, Bangalore Institute of Dental Sciences & Research Centre, Bangalore. On history it was found that the patient was suffering from squamous cell carcinoma of the right eye and the eye had to be enucleated. Patient reported to us 6 months after surgery.

On examination of the defective eye socket, it was found that he had a defect with a shrunken orbit with no movement of the rudimentary upper and lower eye lids. There was enough tissue bed for the ocular prosthesis to be placed (Figure 1). A pre-fabricated eye shell was selected matching with the colour of iris of the left eye and the necessary modification was done (Figure 2).



**Figure 1: Frontal view of patient before prosthetic rehabilitation**



**Figure 2: Pre-fabricated eye shell**

The patient was asked to look forward and to hold the position of the eye in a normal conversational gaze. A mark is made corresponding to the position of the iris in the normal eye. The

position of the midline of the face can also serve as a reference point for the level of symmetry needed for the final prosthesis (Figure 3).



**Figure 3: Lines drawn to assess the position of iris in the enucleated socket**

**Custom made tray fabrication:**

The selected and modified eye shell was flaked in dental plaster to create the lower half of a custom made flask. After creating orientation grooves in the first half of flask, separating media was applied. Second half of the flask was then poured. The two halves were removed and the eye shell retrieved. Self cure acrylic resin was packed into the mould which was obtained and allowed to polymerize (Figures 4-5).



**Figure 4: Fabrication of mould space for the custom tray**



**Figure 5: Fabrication of custom tray**

A hole was made in the centre of the custom tray and a hollow tubewas attached to function as a sprue, so that alginate could be pushed into the enucleated socket (Figures 6-8).



Figure 6: Custom tray with the sprue attached



Figure 7: Positioning of tray in the enucleated socket



Figure 8: Final impression

Impression was poured in dental stone and a custom made flask was created in dental plaster. Orientation grooves were made and separating media was applied. Then the second half of custom made flask was poured. Impression tray with irreversible hydrocolloid was removed from the lower half of the flask and was replaced with transparent heat cure acrylic resin with eye shell in its place. The second half of the flask was placed over it and the two halves were tightened and secured and then subjected to polymerization procedure (Figure 9).

After curing, the prosthesis was recovered, polished and then inserted in the patient (Figure 10).

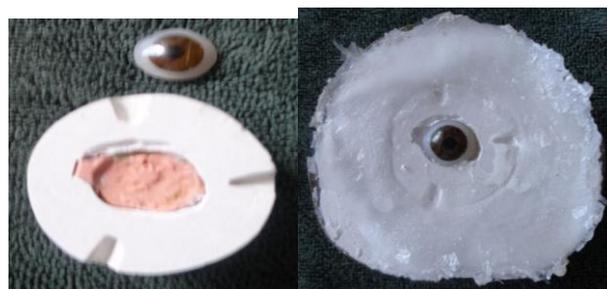
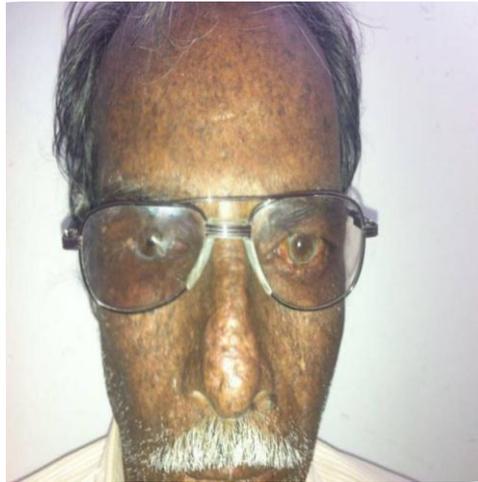


Figure 9: Packing and flasking



**Figure 10: After insertion of prosthesis**

**Post Insertion Instructions:**

Patient was instructed to wear the prosthesis during day time and take it out during night hours and clean it daily with a gentle soap. Daily hygiene was instructed to be maintained by using normal saline as irrigant. Patient was instructed to have his ocular cavity examined once in a month for evidence of any inflammation or infection building up [3].

**CONCLUSION**

The disfigurement resulting from loss of eye can cause significant psychological, as well as social consequences. The goal of any prosthetic treatment is to rehabilitate the patient with a normal appearance and reasonable motility of the prosthetic eye which was achieved in this case. However, patient can also be rehabilitated effectively with other advancements in ophthalmic surgery and ocular implants.

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