

**An Optic Care with Prosthetic Boon – A Case Report**

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**Abstract**

Esthetic and psychologic disability can result from any abnormality on the face, which can mentally challenge any person. Restoration of this defect with an acrylic or silicone based prosthesis will definitely help in gaining the lost confidence of the patient which can be either esthetically or psychologically. This case report is of a patient who underwent lower eye lid surgery. Detailed steps in the fabrication of the prosthesis are produced. As residual monomer has many disadvantages, the laboratory process has been emphasised so as to have a prosthesis with minimal residual monomer content.

**Keywords:** ectropion, lower eye lid, prosthetic aid.

**Introduction**

Ectropion is recognized as one of the genuine complications resulting from lower-eyelid blepharoplasty. It may be correlated with irritative eye symptoms such as xerophthalmia, photophobia, conjunctivitis, epiphora, and foreign-body sensation.<sup>1</sup>

Malposition of any spectrum of the inferior eye lid represents an ectropion clinically and its severity can range from mild lower lid retraction to frank ectropion with marked lower lid turning inside out.<sup>1</sup>

The amount and location of fat protrusion, the amount of skin not required and muscle hypertrophy, must also be estimated before choosing the appropriate surgical approach and adjunctive procedures needed for a successful outcome.<sup>1</sup>

To achieve a stable and esthetic outcome, an integrative input from a prosthodontist, ophthalmologist, surgeon and maxillofacial prosthetist should be considered.<sup>2,6</sup>

Techniques for making this kind of prostheses vary in a spectrum from simple to little complicated. Presented here is the simplest technique for lower eye lid rejuvenation which is very effective and satisfactory, resulting in a prosthesis that is almost monomer free and very compatible with the patient.<sup>2,6,7</sup>

## Case Report

A 38-year-old male patient was referred to the NIMS Dental College from the Department of Plastic Surgery (NIMS medical college) with a lower eye lid scar. It was a case of road traffic accident, where there was V-shaped lower eye lid tissue loss and a rotational flap was given (flap taken from forehead area) (figure-1).



Figure 1

After 6 days of this surgery, patient visited the OPD in the department of Prosthodontics, Crown & Bridge and Maxillofacial rehabilitation, NIMS Dental College. A consent form was duly signed by the patient before the procedure.

Any zygomatic bone fracture or orbital bone fracture were ruled out. Thorough examination of the wound and the face was done. There was swelling over the right cheek area extending from nasal area and covering the skin of whole of the zygoma. Big scar immediately beneath the lower eye lid of the right eye was seen, which could possibly result in ectropion due to downward gravitational pull. Red and teary eyes were also noted (figure-2).



Figure 2

## Method of Fabrication of the Prosthesis

### Procedure

An appropriate eye wear was selected for the patient. The patient was reclined to impart natural display of tissues. The extensions of the selected eye wear were checked on the patient's face. Care was taken to avoid any irritation to the scar tissue underneath eye. After thorough precautionaries check, the patient was explained about the procedure.

### Wax Pattern Fabrication

The wax pattern was fabricated using modeling wax (DPI-Dental Products of INDIA) and was adapted to the eye wear and carefully try-in step was accomplished. Here the main step is to ensure that the scar tissue is left untouched and our motto was to heave the healthy skin beneath the scar which would ultimately support the healing of lower eye lid and exclude the chances of ectropion, if any.

The orientation lines were marked at the area where the wax pattern was set on the eye wear with the help of a marker so that it would help while handling the future prosthesis.

### Flasking, Dewaxing and Packing of the Acrylic

The waxed pattern was then flaked in a two-part flask using dental plaster. Once it set, the wax elimination was done in dewaxing machine and the flask was packed with clear self cure acrylic (DPI- Dental Products of INDIA). A

separating medium unifol (Perident, Italy) was used to facilitate effortless removal of the wax pattern from the mould.

Curing protocol which was followed: A modified curing protocol, known as “reverse curing” which is been reported by Jorge and co-workers was followed to minimize monomer content from acrylic. In this technique, the flask is placed in water at 95°C for 20 minutes and subsequently in boiling water for an additional 20 minutes. The flask was then kept under running tap water to cool it.

### Finishing and Polishing of the Prosthesis

After recuperation of the acrylic 1 mm of its surface was trimmed. The entire prosthesis was smoothed and its margins were rounded off so that it does not irritate the skin of the patient or it does not interfere with the healing of the scar tissue. Polishing burs, pumice and buff were used for polishing the prosthesis to give it a smooth finish. Now the prosthesis was attached to the eye wear as per previously marked orientation lines at the time of wax pattern try-in (figure-3 and figure-4).



Figure 3



Figure 4

A thread was attached from the back side connecting both the arms of the eye wear, so that the eye wear is not loose and patient is comfortable and proper suggested pressure is applied.

Little petroleum jelly was applied just beneath the prosthesis so that it does not impinge or damage the underlying skin due to its hard surface.

The patient was taught how to place and remove the eye wear attached with the prosthesis (figure-5 and figure-6).



Figure 5: Lateral view of the patient wearing the prosthesis



Figure 6: frontal view of the patient wearing the prosthesis  
Instructions regarding the care and hygiene were very simple and were given to the patient so that the patient can follow and execute properly. Patient was recalled for follow up after 7 days (figure-7a) and 30 days (figure-7b) as the scar tissue heal more and the resulted ectropion, if any, can be noticed.



Figure 7b: follow up after 30 days

### Discussion

Though the prosthesis is not functional and can only be used in limited number of cases like the cases of very mild probability of lid retraction after surgery and where there is not so significant trauma of the lids, but this definitely helps for excluding the resultant ectropion of the lower eye lid as we have seen in the case presented.

Here are the some of the advantages of the prosthesis: 1. Any possible risk of ectropion was omitted out.2. Massaging indirectly with the help of the prosthesis, we are generating mild upward pressure against the gravitational pull which will ultimately help to prevent outward turning of the lower eye lid .3. Helps in wound healing.4. Protection from the foreign bodies (for example- dust) due to the eye wear.5. It psychologically helps the patient as the scar is not be seen that prominently because of the eye wear.6.Sensitivity to light might be decreased due to the regular use of the eye wear. Also some of the disadvantages of the prosthesis: 1. Eye infection or Conjunctivitis may occur, if there is residual monomer in the prosthesis, which can be eliminated by properly following the curing protocol of the clear selfcure acrylic.2.Abrasion of the surrounding skin due to the hard surface of the prosthesis, which can be eliminated



Figure 7a: Follow-up after 7days

by applying petroleum jelly or by adding a layer of silicone in between the skin and the prosthesis.

The pressure from the prosthesis will be such that there is no impairment in the free movement of the muscles around the eye and no nerve & blood supply is impaired in this procedure. And we ensured the scar is not in tension or stretched in anyway. As the support is taken from the zygomatic bone area, the skin is free from any pressure.

### **Conclusion**

An eye wear with prosthetic boon is justified after noticing the outcome after 30 days. It is very simple method of fabricating the prosthesis with the commendable result as we can appreciate from the pictures of the patient above.

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