

Prosthetic management of patient with ocular defect

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The eye is a vital organ not only in terms of vision but also being an important component of facial expression. Loss of eye has a crippling effect on the psychology of the patient. Treatment of such cases includes implants and acrylic eye prosthesis. Although implant eye prosthesis has superior outcome, due to economic factors it may not be advisable in all patients. So a custom-made ocular prosthesis is a good alternative. A case of a custom-made ocular acrylic prosthesis is presented here, which had acceptable fit, retention and esthetics.

Key words: Ocular defect, Custom made ocular prosthesis

Eyes are generally the first features of face to be noticed. Removal of this organ either due to tumors, trauma or any other condition not only cause unaesthetic look but also there is loss of function and has a psychological effect on the patient. Thus, ocular prosthesis should be provided as soon as possible for the psychological well being of the patient.^[1]

A case of 41-year-old female, who was reported to Department of Prosthetic Dentistry, Rural Dental College, Loni, for the eye prosthesis is presented here.

CASE REPORT

A 41-year-old female was referred to Department of Prosthetic Dentistry for the Ophthalmology Department. On history it was found that the patient was suffering from malignant melanoma of the right eye and the eye had to be enucleated. So surgery was done and the eye was enucleated [Figure 1]. On examination of the patient 15 days after the surgery, it was decided that a custom-made ocular prosthesis would be the best to meet the needs of the patient as the extra effort that is put into fabrication of a custom-made prostheses would enhance the esthetics and functional results rather than a stock ocular prosthesis.

DISCUSSION

The art of making artificial eyes has been known to man for centuries. Until World War II, the glass eye was the most popular eye manufactured. The glass eye however was difficult to manufacture and was dangerous when it imploded. One of the pioneers to use glass eye was Ambroise Pare (1510-1590) In 1944 Murphy and Nirronen fabricated physiologic ocular

prosthesis in dental corps of US Navy.^[2]

Procedure

Treatment was planned after careful examination of the area of the defect. Patient was explained about the procedure and its limitations.

Fabrication of the prosthesis

First, petroleum jelly was applied to the eyebrows for the easy removal for the impression material when its sets.

The impression of the socket was taken with the Rubber base impression material with light body.

The impression material was slowly injected into the socket taking care to avoid any air bubbles. The patient was instructed to make various eye movements so as to get functional impression of the eye. The material was reinforced with orthodontic wire to hold it in place and for ease of removal after it sets.



Figure 1: Patient with ocular defect on right side after surgery



Figure 2: Impression was poured in a two piece dental stone

Figure 3: Final trying was done keeping iris in its defined position

Figure 4: Prosthesis inserted in patient's eye

After the material had set, it was carefully removed from the socket.

Impression was checked to ensure that all the surfaces are recorded. A two-piece dental [Figure 2] stone was poured to immerse the lower part of impression. After the stone had set, separating media was applied on the surface. Then a second layer was poured. Markings were made on all four sides of the cast for proper reorientation of the cast.

Next, the wax pattern was fabricated by pouring the molten wax into the impression. The wax was properly counteracted and carved to give it a simulation of lost eye.

Try in of the wax pattern was done. Petroleum jelly may be applied in the tissue surface of the wax pattern to avoid irritation to the tissues. The wax pattern was checked for the size support from tissue simulation of eye movement and eyelid coverage.

A prefabricated iris button, whose shade matched with the contra lateral eye, was selected. The position of iris was determined with help of landmarks making the patient look straight. Later the final try in was done keeping the iris in its defined position [Figure 3]. Then shade of the sclera portion was selected using the tooth coloured acrylic shade guide.

Flasking was done taking care that the iris is secured to one counter of the flask and remaining part in the other portion of flask. Packing was done with the selected heat cure tooth colored acrylic with small red colour silk thread, which may simulate the blood vessels. Slow curing cycle was carried out for acrylisation.

After curing the prosthesis was recovered and polished. Next, it was inserted in patient's eye [Figure 4].

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 artificial eye to overcome the agony of losing an eye.^[3]

A well-made and properly planned ocular prosthesis maintains its orientation when patient performs various movements. With the development of newer materials the socket can be finely recorded on which custom made ocular acrylic prosthesis can be fabricated with exact fit and esthetics.

Although the prosthetic rehabilitation may be enhanced with the use of implants, which can coordinate the movements with natural eye, they are not always possible or feasible.

More ever the use of stock ocular prosthesis of appropriate size and colour cannot be neglected, a custom made ocular prosthesis provide better results functionally as well as esthetically.

CONCLUSION

The use of custom-made ocular prosthesis has been a boon to the patients who cannot afford for the implant placement. Also, as discussed above, the esthetic and functional outcome of the prosthesis was far better than the stock ocular prosthesis.^[4] Although the patient cannot see with this prosthesis, it has definitely restored her self-esteem and allowed her to confidently face the world rather than hiding behind dark glasses.

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