

Prosthodontic rehabilitation of an ocular defect: A case report.

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Abstract

Physical defects which deform the functional activity and appearance that restrict a human-being to lead a normal life, usually attract that person to go under a procedure which can provide a normal life. The disorders involving eye and the orbit that needs surgical interventions that ultimately results in ocular defect, if immediate attention is given after the conservative surgery of the eye or the socket and the conformers are provided still the contractures are seen. The conformers are not given in maximum cases, which causes delayed reduction of space for fabricating ocular prosthesis. An ocular prosthesis is a exact duplication of human anatomical eye by the use of prosthetic materials to generate the illusion of exact healthy normal eye and peripheral tissues. That is why much focus is given to the precise duplication of contour, size and colour that can provide realistic and symmetrical eye to the patients.

Key words: Ocular Defect, Artificial Eye, Conformer, Ocular prosthesis.

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Email address: - Sonu.dmf@gmail.com **Phone no:** 9557192716 **DOI:** 10.5281/zenodo.6987184

Submitted: 28-June-2022 **Revised:** 27-Jul-2022 **Accepted:** 3-Aug-2022 **Published:** 15-Aug-2022

Bibliographic details: Journal of Orofacial Rehabilitation Vol. 2(2), Aug 2022, pp. 77-81.

Introduction

As beauty is the prime concern of a human being now a day, so any kind of maxillofacial defects which prevents a person from leading a normal life by compromising function and appearance, has to be treated primarily. A physical defect causing loss of eye and which ceases a patient's confidence which is the greatest misfortune and needs early replacement.^[1] Prosthetic rehabilitation of ocular defect, is an art imposing a pattern based on experience and our esthetic enjoyment is recognition of the pattern.

As ocular prosthesis is a technique sensitive procedure of creating an illusion healthy normal eye and the peripheral tissue by simulating exact anatomy using prosthetic materials.^[2]

That is why much focus is given to the exact duplication of colour, contour and size which will provide realistic and symmetrical appearance.

Case report

A male patient of age 45 years reported at the prosthodontic department with a chief complaint of right eye missing for 2 years. History reveals of road traffic accident and medical report shows evisceration of the eye. We inspected the depth and extent of the defective eye, no much contracture was seen and all the possible movement of eye ball was present, then we planned to fabricate customized ocular prosthesis providing better adaptation and esthetic to the patient. Treatment plan finalized was fabrication of customized ocular prosthesis.

Procedure

On the 1st appointment past history along with personal information was recorded. Inspection of defective eye socket and pre operative multiple photographs were taken (Figure 1). Lubrication of the eyelashes and the eyebrow with petroleum jelly was done

on the defect side. Cleaned the socket by injecting cool saline solution into it and soaked with pellets of cotton. Fabrication of impression tray was done with self cure acrylic attached to the hub of the syringe (Figure 2). Tray was perforated and finishing polishing was done to ensure no irritation to eye, then it was placed into the eye and all possible movement done. After that light body additional silicone filled into the syringe placing the tray into eye then plunger is pressed and all possible movement done to record the impression of anophthalmic socket (Figure 3). Impression was minutely investigated for accuracy and excess material was removed. Beading-boxing was done and impression was poured with type IV die stone. As the cast was produced and properly trimmed (Figure 4) it was marked as superior, inferior, medial and distal. A conformer was fabricated with self cure acrylic (Figure 5) on the cast, finished and polished. The prefabricated eye shell as matched with patient's digital images of other eye taken at different angles, then the part of sclera was trimmed of and iris was preserved with finished border. The wax relined conformer was adjusted by softening the wax in hot water and the patient was asked to do various eye movements which included closure of eyelid and moving the other eye in upward and downward direction as well as right and left movement. This adjusted wax relined conformer was finally adjusted for fullness and esthetics by placing the iris into wax (Figure 6). Then it was placed back onto the cast, borders were sealed with wax and a pop button was made over the iris to ensure its position during lab procedure (Figure 7). Three notches were made on the borders of the cast to maintain proper positioning (Figure 8). Flasking, dewaxing and curing done (Figure 9), the trial ocular prosthesis was replaced by tooth color heat cure poly methyl methacrylate resin (DPI, India) (Figure 10). The ocular prosthesis was

trimmed, polished and inserted into patient's eye to ensure proper fitting (Figure 11). After that characterization was done on the sclera with fine thread and acrylic colors to match the other side of the eye providing better esthetics (Figure 12). The characterized features were covered with clear heat cure poly methyl methacrylate resin (DPI, India). Final finishing and polishing done and inserted into the eye (Figure 13). All possible movements were done to ensure proper fitting and esthetic was also evaluated. Post insertion instruction were given and patient was recalled for follow-ups.

Discussion

It's the right given by God to a human being to appear as a human, our face is a visiting card of a person. We can't hide our face like other body parts. Eyes are generally the first feature to be noticed and the presence of paired symmetrical eyes are quite necessary to maintain the esthetic and the balance of the face. Losing an eye causes crippling effect on the psychology of the patient.^[3] Several techniques can be used in fabricating and fitting ocular prosthesis. The most common technique of fabricating custom ocular prosthesis is fitting a stock eye, modifying it by making the impression of ocular defect.

The fabrication of a customized acrylic eye provides more esthetic and precise results because an impression that establishes the contours of the defect along with the iris and the sclera are custom fabricated.^[4]

Conclusion

Losing any of the part in the facial region causes both psychological and physical trauma for the patient which results in significant social along with psychological consequences.^[5] A proper knowledge regarding recent advancements and surrounding anatomy in this field is prudent.

The person should be very innovative and also quite artistic to treat these type patients, utilizing all the available material and unique technique. Above all of these empathy towards the patient's condition should be present.^[6]

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FIGURES



Figure 1



Figure 2



Figure 3



Figure 4

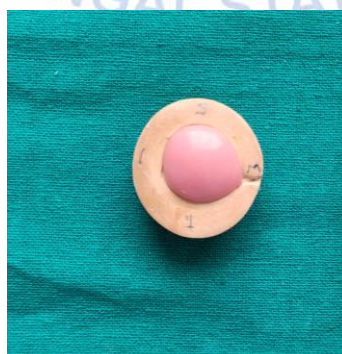


Figure 5



Figure 6



Figure 7



Figure 8



Figure 9



Figure 10



Figure 11



Figure 12



Figure 13