Prosthodontic Rehabilitation of Ocular Defect: A Case Report.

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Abstract

Aconsiderable number of people, each year acquire various facial defects resulting from malignant diseases, trauma and congenital deformities. These defects range from minor cosmetic discrepancies to major functional limitations.The face is the patient's contact with the world and it forms the physical basis for the person's recognition. The special sensory organ such as eyes plays vital role in daily life. This article describes the prosthodonticrehabilitation of an ocular defect with ocular prostheses, which will increase patient's quality of life and self-confidence to live normal social life.

Key Words

Ocular defect, scleral shell prostheses, ocular prostheses.

Introducton

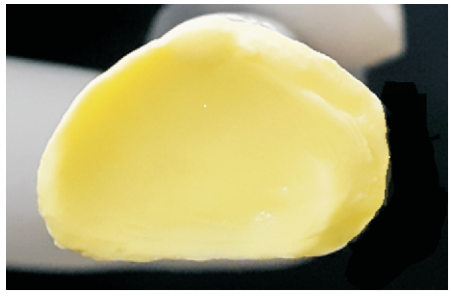
The disfigurement associated with the loss of an eye can cause significant physical and emotional problems.[1]The loss of an eye can be a very traumatic event in a person's life, not only medically, but also emotionally. Although an ocular prostheses does not provide vision to the patient, it will provide emotional support and cosmetic satisfaction to patient. Patient's with an ocular defect is totally blind on the affected side and has monocular (one sided) vision which affects depth perception.The Scleral Shell Prosthesis is a thin hard acrylic shell-like artificial eye. It covers the entire surface of the eye, restoring it to a natural appearance.[2]

Case Report

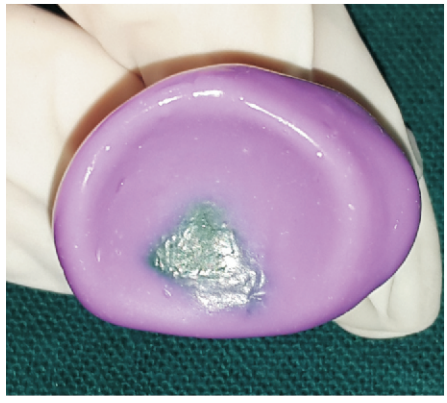
A 23 year old male patientvisited to the Department of Prosthodontics & crown & bridge, Bharatividyapeethdeemed university dental college and hospital, Pune. He came with the chief complaint of congenitally missing left eye. On examination of defective eye socket, there was an intact tissue bed.

Procedure

Primary impression:Patient was instructed to tilt his head backward, and thin layer of Vaseline was applied on eye. Alginate (Tropicalgin chromatic alginate impression material) was used to make primary impression. Impression was made by injecting the material first into the depth below the upper eye lid and then into the lower .This was done to record the proper extensions of the defect. After whole eye socket was filled with material, the patient was asked to close his eyes so that the excess material could flowout. Patient was then instructed to move his eyes to the left then to the right, then up and down and finally in a circular motion, so that the functional impression of the defect could be recorded.[3]The impression was then retrieved when it had completely set. The alginate impression was then poured with type II dental stone (Dutt stone) within 15 minutes. After dental stone cast had set completely, custom tray was fabricated so as to make final impression. Handle was made on custom tray as holding device.



Final impression: Custom tray was trimmed, polished and then tried on patient's eye socket to check proper extensions. With the help of low fusing impression compound (DPI)border molding was done to record proper extensions. While doing bordermold-ingpatient was again instructed to move his eyes to the left then to the right, then up and down and finally in a circular motion. Then final impression was made using light body addition silicon impression material (3M ESPE). This impression was then poured with dental stone (Dutt stone) to obtain sectional casts.The first half of sectional cast was poured while keeping the impression surface facing upwards and after which the indexing of the first pour was done so as to allow orientation of the second half. Second half was poured after complete setting of first half. After complete setting the two halves of the cast were separated.



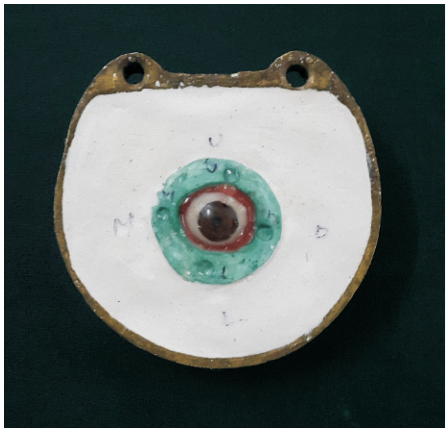
Selection of iris: The selection of the iris for the patient was done by trimming and modifying a commercially available stock eye which had almost matching resemblance to his unaffected natural eye.

Wax pattern trial: Wax pattern was fabricated on final cast, Then this wax pattern was checked for fullness of the both palpabrae and the eye socket along with the extensions, this was confirmed by instructing the patient to close his eyes and patient was inspected from the profile view. To achieve symmetry, the distance was measured from the midline to the centre of the pupil of the natural eye and the same distance was marked on the affected side and carved into the wax pattern.The wax pattern was taken out, then the iris was placed onto the marked position and adjusted according to the horizontal and vertical axis. Then wax pattern with iris in position was tried for symmetry and functional movements.

Flas king and Dewaxing: Wax pattern was

sealed onto the cast. Then wax pattern with the castwas invested in conventional manner as in the case of a complete denture laboratory procedures.After final setting of plaster,

dewaxing was donetaking care that there was complete wax elimination from the mold space. After wax elimination a separating medium was applied onto the cast.



Packing and curing: Themold was packed using tooth colored heat cure polymethyl methacrylate (DPI Heat Cure) and it was kept for bench curing to enable complete polymerisation. This will help to reduce porosities. Then flask was kept for long curing cycle of 6 hours at 72 degree to prevent the presence of any residual monomer.

Final finishing and polishing of the prosthesis: Acrylic finishing and polishing burs were used to remove all irregularities and surface roughness. Then the prostheses was polished using pumice.

Prostheses insertion and patient's instruction: After finishing and polishing the prostheses was inserted at ocular defect and checked for any areas requiring adjustment. Comfort and esthetics of the patient were evaluated. The patient was educated to insert and remove the prosthesis. Then patient was given instructions for using prostheses daily.

Discussion

Prosthetic rehabilitation fulfils aesthetic aswell as psychological requirements for a patient. A simple procedure for fabrication of ocular prostheses is described in this article. Intimate contact of prostheses with intaglio surface and proper extension, helped in enhancing more natural appearance, function and mainly psychological satisfaction to patient.Although the patient cannot see with this prosthesis, it will help to restored his self-esteem and allowed him to confidently face the world.[9,10]

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