Case Report:

Cosmetic correction of Anterior Staphyloma: A rare surgery

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Abstract

Anterior Staphyloma is an ectasia of pseudocornea which results after sloughing of cornea with iris plastered behind. Our patient presented with loss of vision, white corneal opacity & abnormal bulging of the right eye since childhood following penetrating ocular trauma by a wooden stick. Patient had come to the hospital only to seek cosmetic improvement. Clinical diagnosis of Anterior Staphyloma was made. After informed written consent patient was taken up for surgery and a Evisceration was performed under local anaesthesia by placing a silicone orbital implant within the scleral pocket. Patient was sent for customised ocular prosthesis after 2 months of surgery. A customised ocular prosthesis over the well formed sclero-conjunctival pocket can bring back some amount of movement with complete cosmetic recovery which apparently appears normal, thus an ocular prosthesis should be provided as soon as possible for the psychological well being of the patient.

Background

A staphyloma is a clinical condition characterised by an ectasia of the outer coats (cornea or sclera or both) of the eye with incarceration of the uveal tissue. The basic underlying pathology is weakening of the eye ball which can be caused by many inflammatory or degenerative diseases involving these structures. Corneal (anterior) staphyloma can develop following smallpox, corneal ulcer, trauma and keratomalacia. Anterior Staphyloma is an ectasia of pseudocornea (the scar formed from organised exudates and fibrous tissue covered with epithelium) which results after sloughing of cornea with iris plastered behind. It can be complete or partial depending upon the part of the cornea involved.

Case report

A 21 year old female patient came to Pravara Rural hospital and presented with loss of vision, white corneal opacity & abnormal bulging of the right eye since childhood. Patient was having history of penetrating ocular trauma by a wooden stick in childhood followed by pain redness watering from the same eye. After trauma she developed gradual painless progressive diminution of vision, white opacity and abnormal bulging of right eye ultimately leading to complete loss of vision, 1 year post trauma. Patient had come to the hospital only to seek cosmetic improvement. On general examination patient was averagely built and well nourished. Systemic examination for the respiratory system, cardiovascular system, and abdomen revealed no abnormality. Ocular examination revealed that visual acuity of the patient was 6/6 in left eye and No PL in right eye. Left Eye findings were within normal limits. In the right eye Cornea was bulging forward between the lids. Exposed portion of conjunctiva was lustreless. Cornea was opaque, thinned out and ectatic and iris tissue was adhered to the back of the cornea inferiorly. There was no vascularisation over the cornea (Photograph 1 & 2). Other details could not be appreciated. Digitally the intraocular pressure was found to be normal. Clinical diagnosis of Anterior Staphyloma was made.

After informed written consent patient was taken up for surgery and a Evisceration was performed under local anaesthesia by placing a silicone orbital implant within the scleral pocket. After application of proparacaine 0.5% and povidone iodine 0.3% eye drops a four quadrant peribulbar block was given with 3ml of xylocaine 2% / adrenaline 1:200 000 in each quadrant. A speculum was placed between the eyelids after painting draping under complete...
asepsis. A 360° peritomy was done using Wescott scissors. Care was taken to preserve as much conjunctiva as possible. A full-thickness limbal incision was made with a 11 number blade scalpel. The remainder of the limbus was cut with scissors, allowing for removal of the corneal button along with adhered iris tissue (Photograph 3). The intraocular contents were then removed with the aid of an “evisceration spoon” a round relatively flat curette (Photograph 4). Careful attention was given to the complete removal of all uveal tissues (In theory this decreases (possibly eliminates) the risk of sympathetic ophthalmia).

The inner surface of the sclera was then bathed in alcohol. The purpose of this step is to denature any residual protein that might otherwise incite inflammation, that is, sympathetic ophthalmia. Sclerotomy was performed at 3, 6, 9 and 12 'o' clock position allowing for placement of larger implant. PMMA ball was implanted in the empty scleral pocket (Photograph 5) and Sclera was sutured end to end using silk 6-0 followed by conjunctival suturing by vicryl 8-0 covering the scleral wound. Eye was pressure dressed and bandaged for 48 h to prevent haemorrhage. Patient was started on steroid - antibiotic drops and systemic analgesics/anti-inflammatory drugs post operatively and was discharged after 7 days. The surgical procedure implemented by us caused no complications. Patient was called for customised ocular prosthesis after 2 months of surgery. Prosthesis was fabricated using modified impression technique, which involved conversion of alginate impression into a wax model. The wax model was then sculpted to match for its size (horizontally, vertically and antero-posteriorly) and shape as close as possible to the normal eye; then the iris–corneal position was recorded. Final wax model was moulded and the prosthesis was fabricated using medical grade acrylic material. The prosthesis were immersed in a disinfectant (Chlorhexidine gluconate B.P 0.3% W/V, Cetrimide B.P 3.0% W/N) for 24 h and rinsed with normal saline prior to insertion. After insertion of ocular prosthesis (Photograph 6) the patients was placed on topical antibiotics eye medications. Follow-up visits were scheduled at 1, 2 and 6 weeks and then 3 months postoperatively. The patients was taught how to remove and reinsert the prosthesis. She were also instructed on what to do if there was any discharge from the socket at any time (such as removing the ocular prosthesis at night and use of topical antibiotics and reporting to the hospital). Patient was counselled on the importance of maintaining a healthy socket by the way they handled the prosthesis.
Discussion

A staphyloma is a clinical condition characterised by an ectasia of the outer coats (cornea or sclera or both) of the eye with incarceration of the uveal tissue. The basic underlying pathology is weakening of the eye ball which can be caused by many inflammatory or degenerative diseases involving these structures. Staphylomas are caused due to various conditions. Corneal (anterior) staphyloma can develop following small pox, corneal ulcer, trauma and keratomalacia. Ocular diseases like intraocular malignancies, traumatized globes, painful blind eyes, staphylomas, disfigured globes, etc. are the common indications for eye removal surgeries (enucleation or evisceration). These procedures can be performed along with the placement of an orbital implant wherever indicated depending on the underlying cause. Staphylomas, one of the clinical indications for eye removal, clinically present with a localized bulging or protrusion of globe. It is an infiltration of the uveal tissue through weak or thinned out outer coat (cornea or sclera). They can be either congenital or acquired, and also can be unilateral or bilateral. Depending on the site of lesion, staphylomas can be categorized under anterior, intercalary, ciliary, equatorial and posterior Staphyloma. Anterior staphyloma is a corneal staphyloma while others are scleral staphylomas. Evisceration with the placement of an orbital implant is the most preferred treatment modality.

Most Surgeons prefer doing evisceration over enucleation, favouring final aesthetic outcome and to avoid complications of post-enucleation socket syndrome. 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 causes 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.

Conclusion

Anterior staphyloma is not cosmetically acceptable in the population especially among young ones. After evisceration of anterior staphyloma an implant of PMMA ball was implanted within the scleral pocket to maintain approximate shape and movement of the globe. A customised ocular prosthesis over the well formed sclero-conjunctival pocket can bring back some amount of movement with complete cosmetic recovery which apparently appears normal. In this patient, we have tried the above mentioned procedure with good cosmetic outcome. We recommend the same for cosmetic reconstruction, particularly among young patients.

References


Photograph 5 Photograph 6: Final Outcome


