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Case Report

‘Dirty Picture!-Pleasant outcome’ – A two step approach to anterior staphyloma and bullous keratopathy

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to undertake the stepped surgical intervention, resulting in a visually useful eye.

Case report

A 82-year-old female patient reported with chief complaints of diminution of vision in the right eye since the last 25 years following cataract extraction surgery in a camp in her village. Following the cataract surgery, the patient did not get back good vision and had persistent pain, watering, redness and photophobia for which she consulted a local general practitioner with no relief. After 2 months all these symptoms except diminution of vision subsided. The patient had later undergone cataract surgery for the left eye in a private setup with good visual results. She desired some useful vision in the right eye.

There was no history of headache, ocular discharge, ocular trauma, neck pain/rigidity, fever, cough, weight loss, hypopigmented hypoaesthetic patches or orogenital ulcers. Personal and family history was not relevant.

Best corrected visual acuity (BCVA) in the right eye and left eye was 3/200 with accurate projection of rays and 20/40 respectively. The right eye showed quiet lids and adnexa with a large nebulo-leucomatous deep stromal corneal opacity occupying the whole of cornea except 1 mm of inferior and nasal juxta-limbal cornea. The opacity showed superficial vascularisation in the superior and temporal quadrant, but had no deep vascularisation or epithelial defect. There was relative thinning of the superior cornea. The right eye also had an intercalary and ciliary staphyloma at the superior limbus

Introduction

“All our words are but crumbs that fall down from the feast of the mind”

-Khalil Gibran

It is not rare to come across an eye, which on the first look appears irrecoverably lost. However, a step by step management after ensuring adequate retinal function, tackling one pathology at a time often produces some visual benefit, even in the most morbid looking eyes. We present a case report of a 82-year-old lady who presented to us with an Intercalary and Ciliary Staphyloma with Aphakic Bullous Keratopathy Right Eye. Her eagerness to get some vision in her eye encouraged us

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from 12'O clock to 3:30'O clock. The anterior chamber was deep with aphakia. Further details were not discernible due to the corneal opacity and fundus examination and gonioscopy was not possible. The left eye was normal with a well-centred PCIOL.

IOT by tonopen was 20 mmHg both eyes. B scan of both eyes was anechoic. Complete Blood Count, Blood Glucose, ESR, rheumatoid factor, cANCA (antinuclear cytoplasmic antibody), PANCA, Antinuclear antibody, HLA-B27, LFT, KFT, chest X-ray, X-ray Sacro Iliac joints were all normal.

The patient was diagnosed as a case of "Superior intercalary and ciliary staphyloma with leucomatous total corneal opacity (post Aphakic Bullous Keratopathy)."

The patient was planned for sequential homologous scleral patch graft for the staphyloma followed by penetrating keratoplasty (PK) with PCIOL implantation RE after exhaustive counselling. The patient was started on Tab. Mycophenolate

mofetil (MMF) 500 mg BD and Tab Prednisolone 40 mg OD along with all the supportive therapy and taken up for scleral patch grafting of the superior staphyloma 1 week later, 11 Jul 2011. Per-operatively, absolute alcohol preserved homologous scleral patch graft was kept in Ringer's Lactate solution for 45 min with three changes. Per-operatively, it was found that in the centre of the staphyloma, the conjunctiva was firmly adherent to the uveal tissue, and separation would have resulted in an open globe. Therefore, piece meal dissection and scraping of conjunctiva was done in this region after pre-securing the limbal end of the patch graft with 5×9^0 nylon interrupted sutures. For the sutures on the edge away from the limbus, the bite in the host sclera was taken about 1.5 mm posterior to the point where the graft sclera edge rested on the host sclera. The final scleral graft measuring 30×20 mm was covered with advancement of upper bulbar conjunctiva anchored with 8^0 vicryl sutures (Fig. 1).

Fig. 1 – Repair of staphyloma in stage I. (a) Pre-operative picture. (b) Conjunctival dissection around the staphyloma. (c) Limbal edge of a oversized scleral patch secured. (d) Trimming of scleral patch and conjunctival undermining posteriorly to insert the scleral patch. (e) Insertion and suturing of the posterior edge of the sclera patch maintaining it taut. (f) Final post-op picture.

Post-operatively, the patient was put on MMF 1 g BD halved every 2 months, oral steroids tapered over 6 weeks and supportive therapy. Topically she received steroids, antibiotics, NSAID, Gt Timolol 0.5% BD and lubricants.

Four months post-op, on 21 Nov 2011 the patient was taken up for anterior vitrectomy, PK (Host button 8 mm, Graft button 8.5 mm, 16 interrupted buried 10/0 nylon sutures, 1 mm inferior decentering) and PMMA 6.5 mm/12.5 mm rigid PCIOL implantation in the sulcus. A +17.5D PCIOL was used, taking into consideration the keratometry and axial length of the other eye. A vitreous free anterior chamber was ensured and a peripheral buttonhole iridectomy and an inferior sphincteroplasty done (Fig. 2). Post-operatively, oral medication continued unaltered and the topical steroids were

stepped up to 8 times a day before again tapering them every fortnight.

At present, the scleral patch graft has integrated well with conjunctival vessels growing on the graft. The PK is also optically clear. The patient has a BCVA of 6/18 in the right eye with a well-centred lens and a corneal astigmatism of +7.0D at 60°. **A dirty picture ending in a gratifying result!! (Fig. 3).**

Discussion

The salient points needing discussion are (1) sequence of surgery (2) probable cause of the staphyloma (3) variation in techniques necessitated by the co-existing pathologies.

Fig. 2 – Penetrating keratoplasty carried out as second stage. (a) Pre-operative picture. Note the well-integrated superonasal scleral graft. (b) After removing host corneal button, PCIOL being inserted after vitrectomy. (c) Host button being positioned. (d) Interrupted 10/0 nylon sutures applied. (e) Fluorescein dye application to edges to check for leakage. (f) Final post-op picture on table.

Fig. 3 – Four months post-op picture.

- 1) *Sequence of surgery:* In this case we decided to tackle the staphyloma first, so that we had a stable integrated globe when we went in for keratoplasty and to prevent a damaged or rejected graft induced by manipulation while doing scleral graft as the second step. Though doing the PK first would have allowed us to use absolute alcohol preserved sclera from the same donor corneo-scleral button for grafting, we believed doing a scleral graft first to be much safer.
- 2) *Probable cause of staphyloma:* In our opinion, the causes of the staphyloma could be (a) conjunctivalized wound gape of first surgery (pseudostaphyloma) (b) localised ischaemia at the surgical site related to disruption of episcleral vasculature due to excessive cautery at the time of first surgery or (c) Surgically Induced Necrotising Sclerokeratitis (SINS).
- 3) *Variation in techniques necessitated by the co-existing pathologies:* While putting the scleral graft, we made sure that the sutures on the limbal side were small, to provide enough space for the interrupted sutures of PK at a later date. The sutures away from the limbus posteriorly had long host scleral bites, so as to stretch the graft taut over the staphylomatous area, providing as spherical an eyeball as possible.

The immunomodulation for both the procedures had an additive effect, amplifying the success of the surgeries in the author's view.

The PK was deliberately decentred inferiorly by about 1 mm to avoid a wound gape as the superior corneal rim adjacent to the staphyloma was thin.

The 4-month interval gave us time to be sure that the scleral graft had taken up well before we embarked on the

keratoplasty, which requires as ideal a situation as is possible. Had the scleral graft not taken up, the plan was to redo the scleral patch graft.

Partial split thickness scleral patch graft was not used for the fear that it might not be able to hold the protruding uveal tissue in contour with the globe. Fibrin glue sealant to fix the scleral graft was also not used for the same reason.

Conflicts of interest

The author has none to declare.

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