Case Report:
Traumatic Intracorneal Epithelial Ingrowth

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Abstract

A 20-year old male patient sustained trauma to the right eye by stone 7 years prior to presentation. The patient’s right eye had corneal scar, sectoral traumatic cataract and chronic retinal detachment in which retinal detachment repair was done. Seven years later, the patient presented with intracorneal epithelial ingrowth, which was confirmed by histopathology. Conjuctival peritomy was done superotemporally and with help of Sinskey hook, a fistula was detected between the limbus and the cornea. An irrigating cannula was entered through the fistula and the intracorneal lesion was aspirated out and sent to histopathology. The limbal fistula was closed after thorough irrigation and aspiration of intracorneal lesion.

Conclusions: Intracorneal epithelial ingrowth can occur after a penetrating corneal injury. The irrigation of epithelial cells and closure of any existing fistula improve the visual outcome and prevent the ingrowth progression.

Key Words: Intracorneal epithelial ingrowth – Cornea – trauma.

Introduction

SURFACE epithelial cells can migrate and grow into the anterior chamber though a breach on the ocular surface [1]. Epithelial down-growth or ingrowth can occur after a penetrating trauma or intraocular surgery, which leads to sight-threatening complications [2,3].

Predisposing factors for the invasion of corneal or conjunctival epithelial cells include incomplete or delayed wound healing [2-8], wound fistulas [3-5], iris or vitreous incarceration in the wound, [2,6] delivery of epithelial cells by instruments in the wound [7] and suture leak [8].

We describe a case of intracorneal epithelial ingrowth after penetrating corneal trauma through limbal fistula.

Case Report

In October, 2014, a 20-year old male presented to King Khalid Eye Specialist Hospital, Riyadh, Saudi Arabia, with diminished vision in his right eye. Seven years earlier he sustained a trauma to the right eye by a stone. The patient had right eye corneal scar, sectoral traumatic cataract and chronic macula off-retinal detachment in which the retinal detachment was repaired by combined pars plana-vitrectomy and scleral buckle technique.

Ocular examination revealed a visual acuity of the right eye 20/400 and the left eye 20/20. The intraocular pressure was 11mmHg and 18mmHg of the right and left eyes, respectively.

Right eye biomicroscopy revelead a large white intracorneal lesion extending from limbus superotemporal and covering the pupil Fig. (1), with peripheral anterior synchia and traumatic cataract. Examination of the left eye was unremarkable.

Ultrasound biomicroscopy of the right eye showed image of split cornea stroma with dense encapsulated stromal lesion Fig. (2).

The diagnosis was made as presumed “intracorneal epithelial ingrowth”, which has been progressing during the last seven years.

The patient was taken to the operation theater and under general anesthesia, conjuctival peritomy was done superotemporally and with help of Sinskey hook, a fistula was detected between the limbus and the cornea. An irrigating cannula was entered through the fistula and the intracorneal lesion was aspirated out and sent to histopathology. The limbal fistula was closed with one interrupted 9/0nylon suture after thorough irrigation with balanced salt solution (BSS) and aspiration of intracorneal lesion. The conjunctiva was closed with 8/0vicryl suture.
The histopathology result revealed scattered epithelial cells which confirmed the diagnosis of intracorneal epithelial ingrowth Fig. (4).

One month postoperatively, the biomicroscopy revealed faint corneal opacities Fig. (3) in comparison to the initial presentation Fig. (1), through which the temporal iris can be seen clearly with traumatic cataract and pupillary peak superotemporally.

On the last follow-up, six months after surgery, the right eye examination was stable with the same faint corneal opacities and no sign of recurrence of intrastromal corneal epithelial ingrowth and his visual acuity improved to 20/300.

Fig. (1): White intracorneal lesion.

Fig. (2): Ultrasound biomicroscopy showing split cornea stroma with encapsulated stromal lesion.

Fig. (3): Faint corneal opacities.

Fig. (4): Histopathology picture of the intracorneal lesion showing scattered epithelial cells.

**Discussion**

By review of relevant literature, the author realized that ocular epithelial ingrowth has been commonly reported inside the anterior chamber whether after trauma [9] or after intraocular surgeries [10-13], while epithelial ingrowth inside the cornea is rare and has never been reported after trauma, but it had been frequently reported after descemet stripping endothelial keratoplasty [1] or after laser in situ keratomileusis (LASIK) procedure [14,15].

Bansal, et al. [1] reported a case of epithelial ingrowth into the intracorneal stromal interface after descemet stripping endothelial keratoplasty which was developed at the site of inferior stromal puncture. They suggested that the epithelium might have grown into the stromal puncture tract when the corneal epithelial defect was healing during the postoperative period. The affected area of ingrowth did not increase in size after one year. Semeraro, et al. [16] emphasized that prevention is the mainstay treatment for epithelial ingrowth after descemet’s stripping endothelial keratoplasty. Once intracorneal epithelial ingrowth is detected, careful evaluation by confocal microscopy and close follow-up are necessary.

Wang, et al. [17] reported that an incidence of epithelial ingrowth of 35 eyes among 3,786 eyes that underwent LASIK (0.92%). They suggested two hypotheses for the mechanism of epithelial ingrowth, either due to postoperative invasion of epithelial cells under the flab, or due to implantation of epithelial cells during surgery.

In our case, it was quite unique that the ingrowth passed through a patent limbal fistula between the limbus and corneal stroma secondary to trauma. Due to patient’s neglect to follow-up, he came after 7 years with advanced intrastromal corneal epithe-
In our patient, after irrigating and cleaning the epithelium inside the cornea and closing the fistula, the disease improved with no signs of progression.

Conclusions:

Intracorneal epithelial ingrowth can occur after a penetrating corneal injury. The irrigation of epithelial cells and closure of any existing fistula improve the visual outcome and prevent the ingrowth progression.

References


