

Thermo-cauterization and amniotic membrane grafting for extensive hydrops in a child with vernal keratoconjunctivitis

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Key words: Acute hydrous, keratoconus, thermo-cautery

A 10-year-old boy with bilateral vernal keratoconjunctivitis (VKC) and secondary keratoconus (KC) presented to us, with sudden onset decrease in vision in the right eye for 1-week duration. Visual acuity was characterized by the perception of light and slit-lamp examination revealed acute corneal hydrops with limbus-to-limbus dense corneal edema and severe ectasia [Fig. 1a]. Anterior segment optical coherence tomography (AS-OCT) failed to identify the Descemet membrane (DM) tear because of the markedly increased corneal thickness and large intracorneal fluid clefts. The patient underwent C3F8 descemetopexy but no clinical improvement was observed at the end of 1 week. He then underwent thermo-cauterization of the Bowman's membrane and amniotic membrane transplantation (AMT) [Fig. 2]. In addition, instantaneous

reduction in the corneal protuberance was noted during the surgery [Fig. 1b]. Later, by 3 months there was only a central corneal scar with BCVA of 6/36 with -4.0D sphere [Fig. 3].

Vigorous eye rubbing in patients with severe VKC not only precipitates the early onset of KC but can also be associated with extensive hydrops.^[1-3] Conventional medical therapy or C3F8 gas injection is less likely to be successful in severe cases in view of the large DM tear. Consequently, DM suturing may also be difficult since the DM break is not visible clinically or on AS-OCT. PK is usually associated with very high chances of graft rejection in acute cases and is technically very challenging in such eyes with extreme thinning. Multifocal thermo-cauterization of the cornea with amniotic membrane transplantation is a much safer and easier option for such cases.^[4,5] Although cauterization aids in the evaporation of the stromal fluid, in return it leaves behind a thermally injured cornea. AMT over this injured cornea facilitates epithelialization and reduces scarring. In our case, AMT was even more crucial in view of the poor limbal morphology secondary to the VKC.

In conclusion, corneal cauterization with AMT helps to hasten recovery, corneal deturgescence before keratoplasty, and can be a definitive treatment in cases where keratoplasty is contraindicated.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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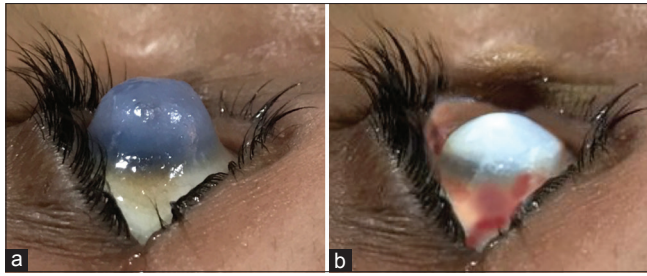


Figure 1: External photographs: (a) Preoperative extreme protrusion of the corneal tissue resulting in difficulty in eye closure. (b) Immediate reduction in corneal protrusion postoperatively

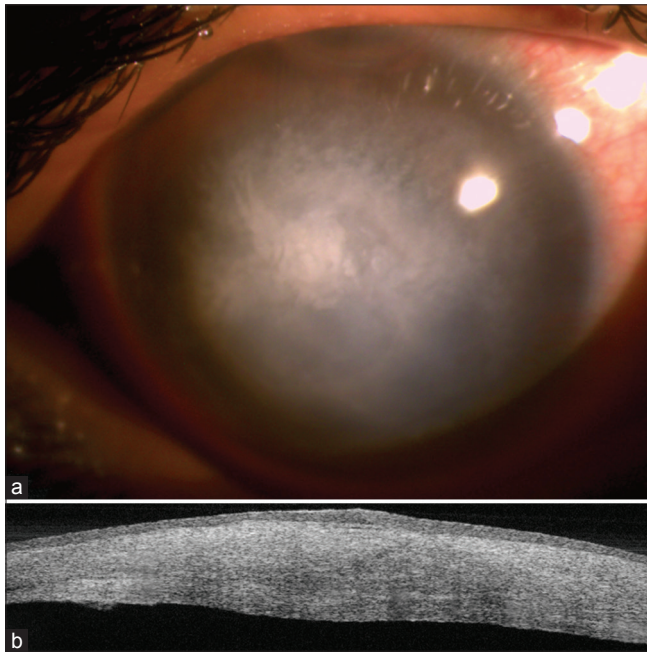


Figure 3: (a) Slit-lamp photograph and (b) AS-OCT demonstrating central corneal scar at the end of 3 months

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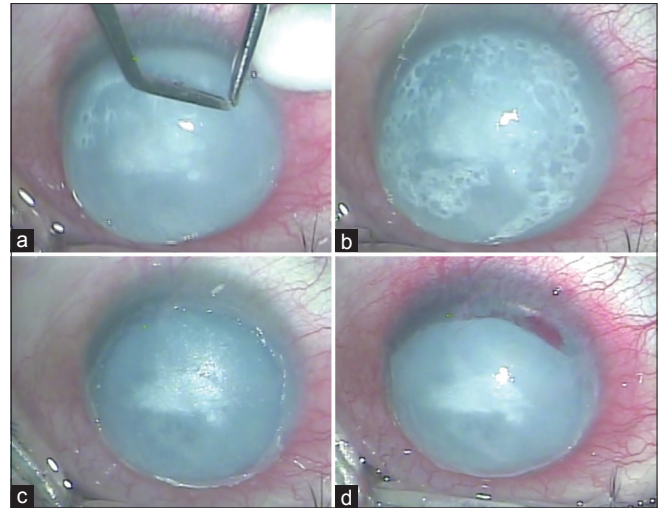


Figure 2: Intraoperative photographs: (a and b) Application of thermal cautery to the corneal surface. (c) Note the significant collapse of the cone of the keratoconus at the end of cautery application. (d) Amniotic membrane was applied at the end of the procedure

Conflicts of interest

There are no conflicts of interest.

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