

Management of severe *Acanthamoeba* keratitis and complicated cataract following laser *in situ* keratomileusis

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Key words: Acanthamoeba keratitis, complicated cataract, post-LASIK infection

According to previous studies, the incidence of postoperative laser *in situ* keratomileusis (LASIK) infections are rare, as such 1 in 2919 cases have been reported with *Mycobacteria* and *Staphylococci*^[1-3] being the most common organisms implicated. In the present study, we are reporting a challenging case of *Acanthamoeba* keratitis, a rare infection following LASIK, managed medically as well as surgically with flap amputation. On subsequent follow-up, the development of complicated cataract was observed which was well-managed, leading to good anatomical and functional outcome.

A 24-year-old lady, who underwent microkeratome-assisted LASIK elsewhere, 3 months ago for myopia (-4DS), presented with a painful decrease of vision in the left eye. At presentation, the visual acuity was counting fingers close to face, while on examination, cornea [Fig. 1a] showed diffuse anterior to mid-stromal infiltrate with overlying necrotic flap. On microbiological examination, smears made from the stromal bed after lifting and later amputating the unsalvageable flap, revealed *Acanthamoeba* cysts [Figs. 2 and 3]. Postoperatively, [Fig. 1b] both topical 0.02% polyhexamethylene biguanide with 0.02% chlorhexidine were started hourly. After observing the signs of resolving infection with deep vessels [Fig. 1c], topical 1% prednisolone acetate was added every 3 hours along with gradual tapering of biguanides and steroids. Keratitis was completely resolved in 6 months leading to scar (CCT-392µ) and regression of vessels [Fig. 1d]. Complicated cataract observed during follow up was managed with intraocular lens

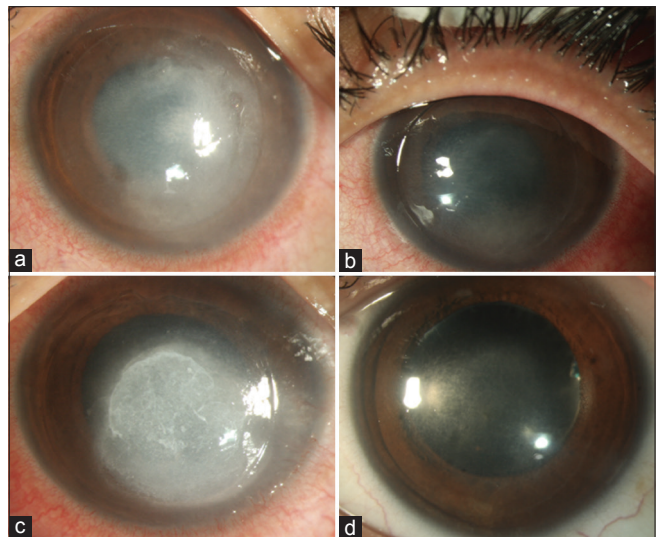


Figure 1: (a) At the presentation to our institute with diffuse stromal infiltration (8.2 mm vertically and 6.4 mm horizontally) (b) After the flap amputation (c) After 1 month of treatment, when steroids were added since deep vessels were noticed (d) Final follow-up after cataract surgery

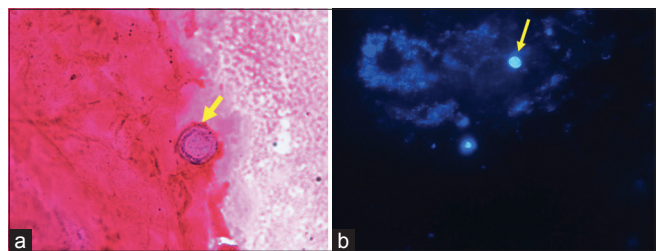


Figure 2: Gram stain (a) of the corneal scraping showing hexagonal double-walled cyst of *Acanthamoeba* (100x) and 10% KOH + 1% CFW STAIN (b) of the corneal scraping showing multiple fluorescent *Acanthamoeba* cysts (40x)

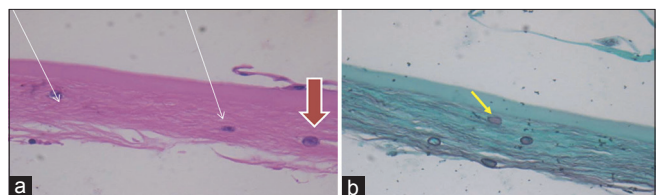


Figure 3: Excised LASIK flap shows double-walled cysts of *Acanthamoeba* (H and E stain (a), GMS (b); 40x)

implantation as calculated with SRK-T formula, resulting into visual acuity of 20/20 (p) with +2.0/-2.5@180.

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Discussion

This case emphasizes the importance of precise microbiological diagnosis and need of long-term treatment (average 3–4 months) along with timely tapering of medications to avoid toxicity and judicious use of topical steroids in post-Lasik Acanthamoeba keratitis. Flap amputation may be considered therapeutic as reported in the literature.^[4] Although visual acuity improved in our case study, use of ASCRS calculator^[5] for IOL power, would have enhanced better uncorrected visual acuity.

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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Conflicts of interest

There are no conflicts of interest.

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