Aspergillus fumigatus keratitis following intracorneal ring segment implantation

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Wisam A Shihadeh

Abstract

Background: Fungal keratitis has been rarely reported following intracorneal ring segment (ICRS) implantation. This paper aims to report a case of fungal keratitis with aspergillus fumigatus following ICRS implantation for correction of keratoconus.

Methods: A retrospective chart review was done. Data including demographics, clinical history and presentation, microbiological analysis as well as clinical management were recorded.

Results: A 34 year old male presented with pain, photophobia, redness and decreased vision in his right eye ten days after ICRS implantation for correction of keratoconus. Slit-lamp examination showed chemosis, ciliary injection, corneal abscess with ill defined edges and hypopyon. Microbiological analysis and culture of the corneal scrapes were positive for aspergillus fumigatus. The patient did not respond to medical treatment and ended up with corneal transplantation.

Conclusion: Although rare, fungal keratitis is a serious vision threatening complication that can complicate intrastromal ring implantation. Prompt and aggressive treatment is essential to prevent irreversible reduction of vision.

Keywords: Fungal, Aspergillus, Keratitis, Intracorneal ring segment
melt. Collagen cross linking was tried but again without significant clinical response. An uneventful therapeutic penetrating corneal transplantation was done a month after the onset of the infection. Histopathology results of the excised cornea confirmed the diagnosis (Figure 2). Postoperative follow up for 16 weeks showed a clear graft with 0.3 visual acuity. No recurrence of the infection was seen so far.

Discussion and conclusion

Patients with keratoconus usually have difficulty achieving satisfactory vision with glasses. Also, not uncommonly they are intolerant to contact lenses. The efficacy of ICRS implantation for the correction of keratoconus has been demonstrated [1]. Microbial keratitis is a serious sight threatening condition. Although infection after ICRS implantation is uncommon, it has been described in more than one report [2-5]. The consequences of this infection could serious; Hofling-Lima et al. described in his series two patients that required penetrating keratoplasty [3]. Some of the possible risk factors described included diabetes, trauma, and the use of contact lenses after implantation of ICRS [2]. Any pathogen can potentially cause this sight-threatening complication; microorganisms identified include Staphylococcus aureus, Staphylococcus epidermidis, Streptococcus viridans, Streptococcus pneumoniae, Clostridium perfringens, Pseudomonas species, Nocardia species, Klebsiella species, and Paecilomyces species [2-4]. Fungal keratitis constitutes a challenge for ophthalmologists both in diagnosis and treatment. It is not common to isolate the organism and the diagnosis is usually based on the clinical presentation.

Our case – up to our knowledge- is the first case of aspergillus keratitis following ICRS implantation. Trauma and the use of contact lens that was potentially contaminated are the two risk factors that we could identify in our case. We were lucky to isolate the organism because the clinical picture was not specific. Although fungal keratitis is usually resistant to medical treatment, successful outcome has been reported with the use of topical and intrastromal voriconazole [8]. In addition to early and aggressive medical treatment, ICRS should be explanted. The role of collagen cross linking for the management of infectious keratitis is still being studied. Therapeutic penetrating keratoplasty is the ultimate option should the conservative methods fail to control the infection.

To conclude, fungal keratitis - although rare- is considered a serious vision threatening complication that can develop following ICRS implantation. Prompt and aggressive treatment is essential to prevent irreversible reduction of vision.

Consent

A written informed consent was obtained from the patient to publish this case report.

Competing interests

The author declares that they has no competing interests.

Disclosure

The author has no conflict of interest with the submission.

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