

Tuberculous infection keratitis following intra corneal segment implantation for the management of keratoconus ESCRS Winter Istanbul 2011



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Abstract

Purpose: To report the first case of Tuberculous infection keratitis following insertion of intrastromal corneal ring segments (Intacs[®]), with its clinical presentation and pathologic findings.

Methods: A 52 year-old female underwent Intacs[®] insertion. Preoperative UCVA was 20/200, BCVA 20/50 OS. Postoperative UCVA was 20/40 and BCVA 20/25 OS. Approximately one year following Intacs[®] insertion, the patient developed a 1 mm epithelial defect with underlying infiltrate at 40% depth, over one of the intracorneal segments. She was prescribed ofloxacin 0.3% Q2h and prednisolone acetate 1% QID. Smears and cultures were negative. The infiltrate progressed to 60% depth. The medications were changed to topical amphotericin C 0.1%, vancomycin 2.5%, and clarithromycin 1%, Q2h. After no improvement, the patient underwent a therapeutic-diagnostic PKP.

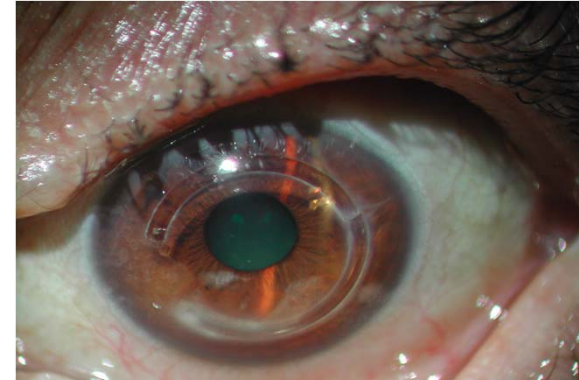
Results: Histopathologic findings were consistent with Tuberculous infection keratitis. Systemic workup was negative. At seven months postoperatively, the patient has UCVA 20/50 and BCVA 20/25 OS, with no signs of recurrence.

Conclusions: To our knowledge, this is the first report of Tuberculous infection keratitis occurring after insertion of intrastromal corneal ring segments. Although Tuberculous infection is an uncommon cause of keratitis, surgeons should be vigilant for this organism as prompt identification and appropriate treatment may result in improved visual recovery.

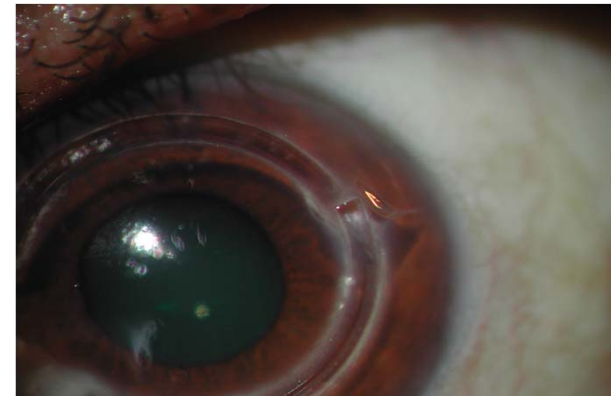


Introduction

- Intrastromal corneal rings (Intacs®) consist of 2 hexagonal poly(methyl methacrylate) segments each 150 degrees in arch length which are placed in semicircular channels between the stromal lamella at two-thirds stromal depth.1-3
- Asymmetric implantation of intrastromal corneal segments (Intacs®) in eyes with keratoconus has been demonstrated to improve both UCVA and BSCVA and reduce irregular astigmatism in corneas with and without scarring.1-3
- There have been very few infectious complications reported with the use of intrastromal corneal segments. 4-7



Epithelial defect and infiltrate OS 1 year following after Intacs® insertion.

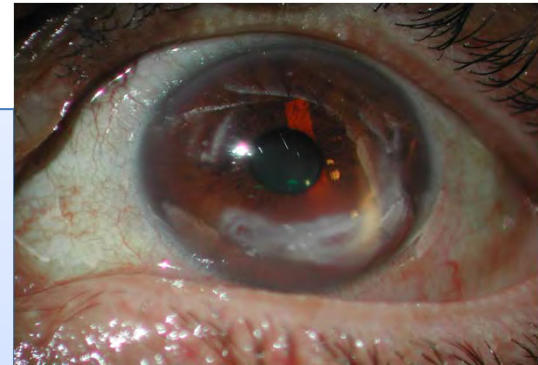


Extrusion of Intacs® OS 14 months following Intacs® insertion.

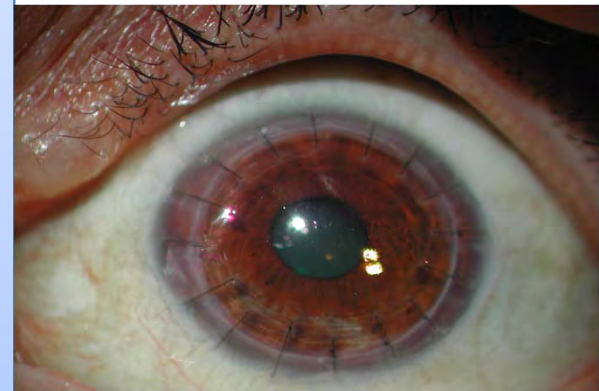


Methods

- A 52-year-old female with a history of keratoconus and a preoperative UCVA of 20/60 OD and 20/200 OS and BCVA of 20/30 OD and 20/50 OS with a refraction of -3.00-3.50 x 170 OD and -5.50-4.50 x 20 OS had intrastromal depth corneal segments (Intacs®) vertically placed in the left eye (a 35 ring superiorly and 45 inferiorly through 65- 70% channels), with good visual rehabilitation, UCVA OS was 20/40 with BCVA 20/25. One year following the implantation of intrastromal corneal ring segments, on slit lamp examination, the location of the lower lateral edge of the intrastromal corneal ring segments insert showed an epithelial defect and infiltrate OS, size of defect and infiltrate 1 mm at 40% depth. The intrastromal corneal ring segments were removed. The infiltrate was treated with ofloxacin Q2h 2 weeks and prednisolone acetate 1% QID for 2 weeks.
- The patient was followed weekly. There were flares and exacerbation one month after treatment. The infiltrate was deep in the cornea at the level of the intrastromal corneal ring segments, at about 60% thickness.
- Suspecting mycoplasma and /or fungus the patient was then treated with 0.1% topical amphotericin C Q2h, vancomycin 10 mg/ml Q2h, and clarithromycin 12 mg/ml Q2h for a week without improvement. Therapeutic keratoplasty followed to ensure containment of the infiltrate in central cornea.



Infiltrate OS 19 months after Intacs® insertion.



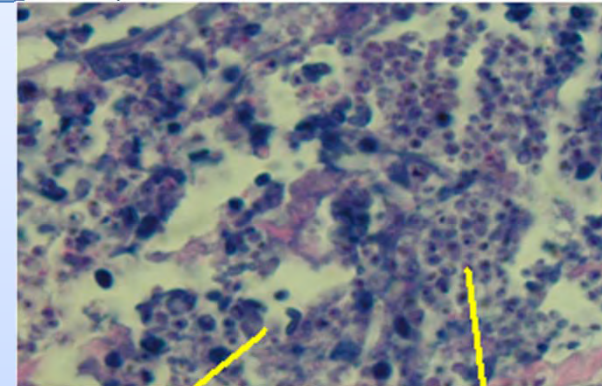
Same Eye Following Therapeutic Keratoplasty



Results

- Cultures grown on blood agar, chocolate agar, thioglycolate broth and Sabouraud's agar were negative and a Gram stain was negative.
- In addition, all cultures and stains following Therapeutic Keratoplasty were negative.
- TB testing was negative.
- The patient was diagnosed on histopathology with Candida Parapsilosis keratitis.
- She underwent a negative systemic workup and at over 1 year postoperatively has no signs of recurrence with UCVA 20/40 and BCVA 20/25.

Yeast with central nucleoid and pseudohyphae (Oil immersion 600X).



Pseudohyphae

Myriads of yeast



A perforating corneal ulcer with dense midstromal infiltrate (PAS 20X).



Results

- While microbial keratitis after Intacs® insertion is uncommon, it is one of the most serious complications.
- Reported species in post-Intacs® keratitis include *S aureus*, *S epidermidis*, and *S epidermidis* combined with *Clostridium perfringens*.⁵⁻⁷
- Patients should be informed of the risk factors and warning signs of infectious keratitis and should be informed to seek medical attention immediately should they develop signs or symptoms of infectious keratitis.
- A high degree of suspicion, appropriate and complete microbiologic testing, coupled with prompt and appropriate treatment may result in better visual recovery.
- Long-term postoperative observation of Intacs® implants is advocated.

Thank you

