Silicone oil induced spontaneous corneal perforation

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Silicone oil is used as a vitreous substitute to tamponade the retina in complex vitreoretinal surgery. Many times, surgeons err on the side of caution and delay oil removal to keep the retina attached.1 Anterior and posterior segment complications of silicone oil insitu are well documented2. Delay in removing silicone oil can have devastating consequences not only for vision but also to the preservation of the ocular structures.

Case report
A twenty six year old male patient who had undergone four prior vitreo retinal procedures for retinal detachment in the right eye elsewhere, presented at our clinic with complaints of sudden leak of “something oily” leaking from the right eye. He did not have any history of ocular trauma. He had been treated for a nonhealing epithelial defect with bandage contact lens earlier and the defect had healed. There was no history of any episode of infectious keratitis. On examination, the visual acuity in the right eye was perception of light with accurate projection of rays in all quadrants. The globe looked collapsed(Figure 1). There was no purulent discharge and no evidence of any microbial infiltrate in the cornea. The cornea was hazy with a central perforation which could not be sealed with tissue adhesive(cyanoacrylate glue) due to presence of tissue loss and non apposition of the perforated area with the glue. The patient was advised to undergo tectonic corneal graft immediately to preserve the globe. The patient was lost to follow up.

Comment
Silicone oil induced damage to all ocular structures is known. Endothelium cell loss and band keratopathy are the most typical changes in silicone oil-associated keratopathy.2 Damages to normal retinal layers and formation of preretinal or subretinal membrane with extensive silicone bubbles are seen in cases of in the cases of silicone oil-associated retinopathy, which included loss and degeneration of neuron cells2. In histopathological studies of eyeballs with long term silicone oil retention the oil vacuoles were found in the sclerocorneal scar, trabecula, iris, ciliary body, choroid, optic nerve and its tunica vaginalis2. These findings demonstrated that the longer the silicone oil was retained in eyeballs, the more severe its complications were.

Band shaped keratopathy is commonly reported. Our patient also had progressive thinning of the cornea and persistent epithelial defect which may be explainable by corneal limbal stem cell deficiency due to multiple vitreoretinal surgeries. Severe corneal damage leading to spontaneous corneal perforation are not commonly reported3. Risk factors for corneal damage are longer duration of oil in the eye, aphakia (with absence of posterior and anterior capsules), silicone oil in the anterior chamber, and extensive and multiple surgeries3.

Figure 1: Collapsed right eye of the patient (arrow showing area of corneal perforation).

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Early removal of silicone oil is advocated along with regular assessment of corneal status which may help prevent devastating complications of long term tamponade with silicone oil

References


Metastatic Tubercular Anterior Endophthalmitis

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Anterior diffuse metastatic endophthalmitis without involvement of the posterior segment is a well known entity\textsuperscript{1}. We are unaware of this condition secondary to tuberculosis being described in literature. (Pubmed search) The patient was a 9 year old girl with decreased vision and redness in left eye of 20 days duration. Her vision was 6/6 in the right eye and 6/36 in the left eye. There was circumciliary congestion in the left eye with 4+ anterior chamber reaction and a thick yellowish hypopyon. (Figure 1) Also anterior segment neovascularisation was evident over the exudates in anterior chamber. The details of the fundus were not clear. Ultrasound posterior segment was anechoic. The right eye was normal. There was no history of trauma or intra-ocular surgery. No positive systemic history and no history of recent IV drug intake.

A provisional diagnosis of metastatic endophthalmitis was made and she was started on systemic broad spectrum antibiotics, topical steroids, antibiotics and cycloplegics. On investigation her blood and urine cultures were negative, mantoux was 15 mm, ESR was 15 mm, chest X-ray revealed left sided minimal pleural effusion.

The patient was not responding to the treatment that had been started. The hypopyon was increasing and also she started developing a nodule at the limbus. The patient was subsequently started on standard four drug anti-tubercular therapy. Following which the patient showed some response in a week.

At 2 month follow up her exudates in the anterior chamber had completely regressed, her vision had improved to 6/9 in the left eye. There was a remnant vascularised membrane in the anterior chamber with an

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oval pupil and minimal cataract. (Figure 2). Also repeat chest X-ray did not reveal any pleural effusion.

Metastatic endophthalmitis has been classified by Greenwald et al\(^1\) into anterior and posterior, focal and diffuse types. We are unaware of anterior diffuse type of endophthalmitis secondary to tuberculosis being described in literature. Tubercular panophthalmitis however has been reported earlier\(^2\). The features suggestive of tubercular aetiology in the cases of panophthalmitis have been presence of nodules on the sclera, limbus or choroid and absence of pain\(^2\). Such patients are generally immunodeficient or children.

Our patient was also a 9 year old child with history of painless loss of vision. The child also had started developing a nodule at the limbus along with the endophthalmitis like picture. The absence of response to conventional antibiotics, the presence of a positive mantoux, pleural effusion on chest X-ray and the high prevalence of tuberculosis in India prompted us to start the child on anti-tubercular therapy. The dramatic response to the treatment confirms the aetiology as being active tubercular infection. Interestingly the child also had developed anterior segment neovascularisation within 20 days of the symptoms. Whether rapid onset of anterior segment neovascularisation also points towards tubercular aetiology cannot be said based on only one case report.

A high index of suspicion of tubercular aetiology in cases of metastatic endophthalmitis in children and immunocompromised patients can probably help prevent progression to panophthalmitis.

**References**
