

Late onset endophthalmitis after sutureless intrascleral IOL implantation with Yamane Technique

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Dear Editor,

We want to present the first reported *Propionibacterium acnes* (*P. acnes*) endophthalmitis case after sutureless fixation of posterior chamber intraocular lens (IOL) to the sclera for the treatment of aphakia to the best of our knowledge. A 69-year-old man with aphakia due to complicated cataract surgery underwent sutureless intrascleral fixation of three-piece posterior chamber intraocular lens (PCIOL) with Yamane technique. What makes this case surprising and interesting was the occurrence of this endophthalmitis in an eye in which the anterior vitreous was completely cleared by anterior vitrectomy after complicated cataract surgery and almost no capsules/zonules. As is known, the hallmark of *P. acnes* infection is the involvement of the posterior capsule or the presence of a white plaque on the IOL.

Intrascleral sutureless fixation of PCIOL has become more popular, since Yamane *et al*^[1] first described the technique at 2014 with less risks of damaging the cornea, iris and iridocorneal angle when compared to the other choices such as anterior chamber IOL or iris-fixated IOL. Previously described intraoperative and early postoperative complications were hyphema, cystoid macular edema, corneal edema and IOL dislocation^[1-4]. However, late postoperative complications such as vitreous haemorrhage, retinal detachment or endophthalmitis have not been reported before in the literature.

Ethical Approval This study complied with the tenets of

the Declaration of Helsinki. Written informed consent was obtained from the patient for publication.

CASE REPORT

The patient was a 69 year-old male with aphakia due to complicated cataract surgery in July 2019. Sutureless intrascleral fixation of three-piece PCIOL (Sensar AR40e, Johnson&Johnson Vision, USA) with Yamane technique was performed, and the haptics were placed to 180° apart to each other at 2 mm from the limbus. Peroperative anterior vitrectomy was performed. His vision improved to 20/25 one week later with good centralization of the IOL. However, his vision decreased to 20/4000 (hand motion) at postoperative 3rd month follow-up without pain and ciliary flush. Mild corneal edema, 4+ anterior chamber cells, and +3 vitreous haze were determined at the examination. The flanges were observed under the intact conjunctival tissue. Retina could not be seen due to vitritis (Figure 1A). Pars plana vitrectomy (PPV) and intravitreal vancomycin (Vancomycin Hcl DBL 500 mg, Wasserburger Arzneimittel GmbH, Germany) and ceftazidime (Fortum 1 g, GlaxoSmithKline SpA, Italy) injection was performed immediately. Aqueous humour and vitreous samples were taken for microbiological analysis. Retinal haemorrhages and whitish bacterial aggregates at pars plana were observed during surgery (Figure 1B, 1C). *P. acnes* was reported at the microbiological analysis of vitreous specimen. The vision was 20/32 at the follow-up examination sixth month after the surgery (Figure 2).

DISCUSSION

Here, we present a *P. acnes* endophthalmitis seen after secondary IOL implantation with Yamane technique. What makes this case surprising and interesting was the occurrence of this endophthalmitis in an eye in which the vitreous was completely cleared by anterior vitrectomy after complicated cataract surgery and almost no capsules/zonules. As is known, the hallmark of *P. acnes* infection is the involvement of the posterior capsule or the presence of a white plaque on the IOL^[5].

The major indications for sutureless intrascleral fixation of IOLs were complications that developed during phacoemulsification, such as capsular defects and IOL decentralisation or subluxation^[6]. It is first described by Yamane *et al*^[1] in 35 eyes

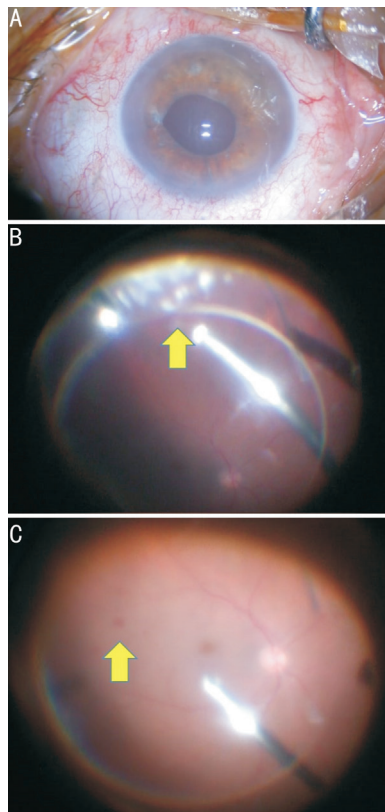


Figure 1 Preoperative photos of anterior and posterior segment of the eye A: Mild corneal edema and anterior chamber cells. Flanges of IOL can be seen at 12 and 6 o'clock position. B-C: Whitish bacterial plaques (arrow-B) and retinal haemorrhages (arrow-C) was observed during PPV.

of 34 patients at 2014 with postoperative complications as iris capture of the IOL in 3 eyes, transient ocular hypertension in 2 eyes, and cystoid macular edema in 1 eye. Retinal detachment, endophthalmitis, IOL dislocation, or vitreous hemorrhage were not detected during the follow-up period^[1]. There are several occasions of complications such as endophthalmitis were described with especially scleral-sutured fixation methods, therefore the prominent feature that makes this technique favorable is having less of risks of complications when compared with conventional scleral-sutured IOL implantation methods^[7]. Todorich *et al*^[8] reported 122 transconjunctival sutureless intrascleral PCIOL implantation cases and one culture negative endophthalmitis. This was the only endophthalmitis case reported after sutureless intrascleral IOL fixation.

P. acnes is an anaerobic, gram-positive, pleomorphic, bacillus causing low grade endophthalmitis, and typical clinical feature is the presence of whitish intracapsular plaque in the periphery. Conjunctival injection, keratic precipitates, and vitritis may be seen, but hypopyon occurs infrequently^[9]. In this case without any capsular support, plaques were seen at the vitreous base near ora serrata. Corneal incisions of phacoemulsification surgery and scleral tunnels of Yamane technique are potential

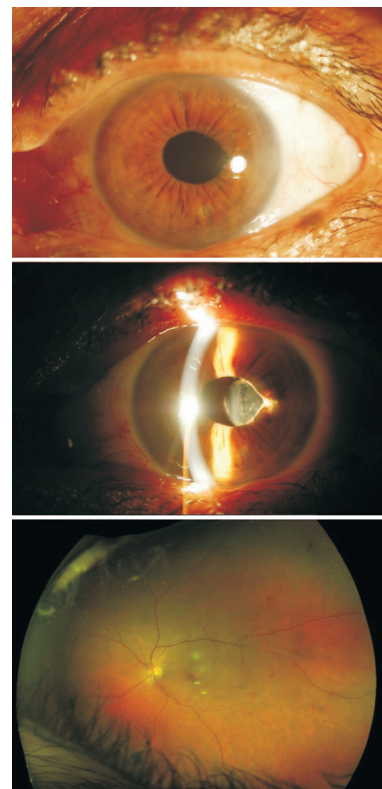


Figure 2 Photos of anterior segment and posterior segment of eye after PPV.

entry sites for the bug. Immediate vitrectomy is suggested in patients with endophthalmitis according to the vision at presentation^[10]. Postoperative vision after vitrectomy surgery was 0.63 without any inflammation in the anterior chamber and the vitreous.

Intrascleral sutureless fixation of PCIOL is a compelling choice for the treatment of aphakia with insufficient capsular support or IOL decentralization, but annoyingly late onset complications such as endophthalmitis have to be kept in mind.

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