Chronic Post-operative Endophthalmitis due to Propionibacterium acnes

Asaf Achiron1,2* and Mohamad Midlij1,2

1Department of Ophthalmology, the Edith Wolfson Medical Center, Holon, Israel
2Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel

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*Corresponding author: Asaf Achiron, Department of Ophthalmology, The Edith Wolfson Medical Center, Holon, Israel, 58100, Tel: +972-3-5028706; Fax: +972-3-5028703; E-mail: AchironAsaf@gmail.com

An 82-year-old female presented with a four month history of left eye glare and visual acuity disturbance. History included dyslipidemia and hypertension. The patient's ocular history included left eye open angle glaucoma, which was diagnosed about three years earlier; she had undergone bilateral cataract removal ten years earlier.

Upon examination we observed left eye hyperemic conjunctiva, disperse white keratic precipitates (KP) with cells in the anterior chamber, and sparkling posterior capsule opacification behind the artificial intraocular lens (Figure 1).

These findings (the insidious onset anterior uveitis and the posterior capsule’s appearance) are suggestive of chronic post-operative endophthalmitis (CPE) caused by Propionibacterium acnes (P. acnes). The patient subsequently underwent avitreous tap (which was negative), received an empirical therapy with intra-vitreal injections of Vancomycin and Ceftazidime and was released with ocular steroidal drops and PO Ciproxin. During the follow-up we noted improved visual acuity (from counting fingers to 6/45) and decreased opacity of the capsule (Figure 2).

The reported incidence rate of CPE is up to 5 per 10000, with more than half of the CPE cases are caused by P. acnes [1]. P. acnes is a gram positive, pleomorphic anaerobic bacillus that is normally found on the eyelid skin, the conjunctiva and ocular surfaces, oral cavity, intestinal tract, and external ear canal. It is associated with chronic inflammation and contamination of various prosthetic devices, which include intra-ocular lens (IOL) (Figure 3).

Figure 1: Through the pupil, we notice the white opacifications on the posterior capsule behind the intraocular lens. These white plaques can appear as a manifestation of chronic endophthalmitis due to Propionibacterium Acnes. They contribute to the decrease in visual acuity.

Figure 2: Notice the decreased posterior capsule opacifications, after injections of Vancomycin and Ceftazidime.

Figure 3: Each bacterium is attached by biofilm-like material to other bacteria and the IOL haptic, with permission from [5].

neurosurgical implants, breast implants, cardiovascular devices, and spine implants [2].

The remarkable adherence of P. acnes to prosthetic devices is due to its ability to tolerate exposure of oxygen level for several hours, and in vitro, P. acnes can survive under anaerobic conditions for up to eight months [2]. The presence of white plaques on the posterior capsule or on the IOL is a characteristic finding for P. acnes endophthalmitis [3].
and fluid sampling may increase detection rates of \( P. \) acnes. Pars Plana vitrectomy and injection of intravitreal and endocapsular Vancomycin may be therapeutic in more complicated cases. In refractory cases with recurrent inflammation, vitrectomy with total capsular bag removal, intraocular Vancomycin injection, and IOL exchange or removal should be taken into consideration [6]. Figure 4 summarize a stepladder approach to treating chronic endophthalmitis due to \( P. \) acnes.

**References**


*Corresponding author:* Asaf Achiron, Department of Ophthalmology, The Edith Wolfson Medical Center, Holon, Israel, 58100, Tel: +972-3-5028706; Fax: +972-3-5028703; E-mail: AchironAsaf@gmail.com

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