

Late onset posttraumatic *Propionibacterium acnes* endophthalmitis

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PURPOSE. To report a case of late onset posttraumatic endophthalmitis secondary to *Propionibacterium acnes* infection.

METHODS. Interventional case report.

RESULTS. A 28-year-old man developed endophthalmitis 6 months after a penetrating trauma. The patient underwent pars plana lensectomy and vitrectomy along with injection of intravitreal antibiotics. Anaerobic cultures of the vitreous yielded *P. acnes*. Seven months after surgery, the eye was quiet with a best-corrected visual acuity of 20/60.

CONCLUSIONS. This case emphasizes the importance of considering *P. acnes* when treating patients with late onset posttraumatic endophthalmitis. (Eur J Ophthalmol 2004; 14: 442-4)

KEY WORDS. Endophthalmitis, Trauma, *Propionibacterium acnes*

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INTRODUCTION

Propionibacterium acnes is an anaerobic pleomorphic, Gram-positive bacillus that is present in the normal flora of the eyelid margin and conjunctiva (1). It has been identified as a causative agent in delayed endophthalmitis following extracapsular cataract extraction and intraocular lens implantation. Patients can present several months after cataract surgery (2). Clinically, it appeared as a chronic indolent iridocyclitis characterized by granulomatous-appearing keratic precipitates, hypopyon, and a white plaque on the posterior capsule or intraocular lens implant. Response

to corticosteroid treatment was transient (2).

This report describes the development of endophthalmitis 6 months after a penetrating ocular injury secondary to *P. acnes* infection.

Case report

A 28-year-old man was referred to our institution 6 weeks after sustaining penetrating trauma with a wire to his right eye. His visual acuity was 20/100 in the right eye and 20/20 in the left eye. Slit-lamp biomicroscopy of the right eye showed a well-healed corneal

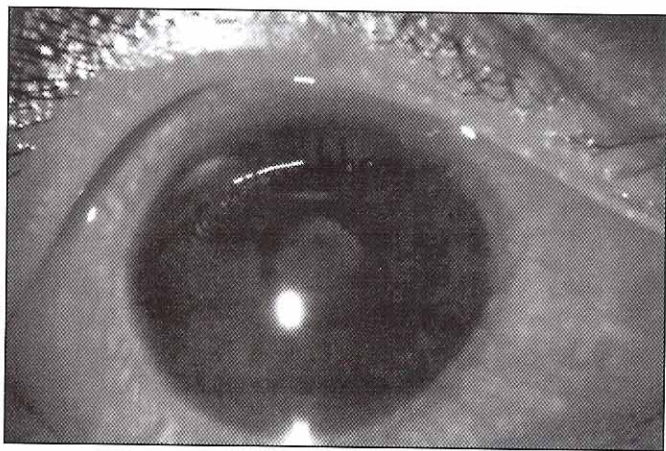


Fig. 1 - Slit-lamp photograph showing conjunctival injection and ciliary flush, corneal scar superotemporally, fibrous membrane in the pupillary area, and small irregular pupil with posterior synechiae.

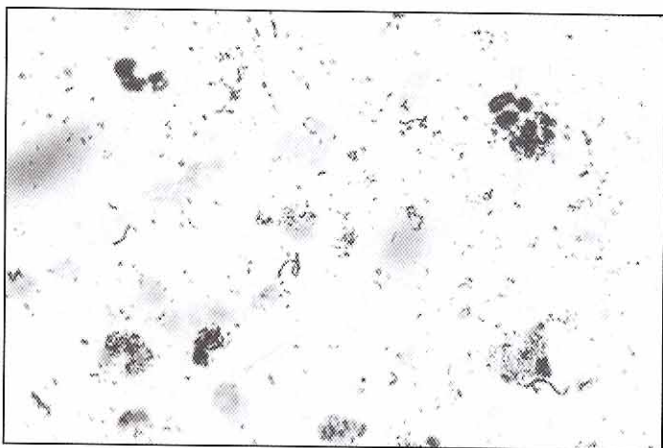


Fig. 2 - Light photomicrograph of vitreous biopsy showing Gram-positive pleomorphic bacilli (original magnification x100).

scar at 11 o'clock site, 2.0 mm posterior to the corneoscleral limbus, clear anterior chamber, and mild cataractous changes. Ophthalmoscopic examination showed clear vitreous and the retina was attached. Six months after the trauma, the patient noted the onset of decreased vision, pain, and redness in the traumatized eye. Visual acuity was hand motions, with good projections in all quadrants in the right eye, and 20/20 in the left eye. Intraocular pressure was normal in both eyes. Slit-lamp biomicroscopy of the right eye revealed severe conjunctival injection and ciliary flush, deep anterior chamber with 4+ cells and flare and small hypopyon, iris vessels, fibrous membrane in the pupillary area, and small irregular pupil with 360° posterior synechiae. No fundus details were vis-

ible, but B-scan ultrasonography revealed retrolental dense vitreous opacities but no retinal detachment. Ultrasound biomicroscopy showed normal results. A presumptive diagnosis of late onset posttraumatic endophthalmitis was made and the patient underwent right eye pars plana lensectomy, removal of the pupillary membrane, and vitrectomy, along with injection of intravitreal amphotericin, vancomycin, and ceftazidime. A dense whitish infiltrate was noted in the anterior vitreous. Analysis of vitreous biopsy showed many pus cells, and Gram-positive pleomorphic diphtheroid-like bacilli. The organism grew anaerobically after 3 days on sheep blood agar and was also isolated from thioglycolate broth. Gram stain of the colonies showed Gram-positive diphtheroid-like bacilli similar to the organism seen in the vitreous biopsy.

The organism was identified as *P. acnes* by Analytical Profile Index 20-A (bioMerieux SA, Marcy-l'Etoile, France). The organism was sensitive to penicillin G, vancomycin, erythromycin, neomycin, gentamicin, bacitracin, and chloramphenicol, and resistant to polymyxin B and metronidazole. No other organisms were isolated. Postoperative therapy included intravenous vancomycin, oral prednisone, and topical corticosteroids, gentamicin, and cycloplegics. The postoperative course was complicated by anterior chamber fibrinous reaction that resolved on the fifth postoperative day.

On follow-up examination 7 months after surgery, the patient was asymptomatic and showed no evidence of infection. The anterior chamber was clear and the retina was flat. Visual acuity was correctable to 20/60.

DISCUSSION

The present patient developed endophthalmitis 6 months after a penetrating ocular injury. *P. acnes* was proven to be the causative agent by Gram stain of vitreous biopsy as well as by pure growth on two anaerobic culture media. Posttraumatic *P. acnes* intraocular inflammation can present as either acute full-blown infection or chronic smoldering inflammation. Ormerod et al (3) reported three cases, and Beatty et al (4) reported another case of acute endophthalmitis after penetrating trauma, from whom only *P. acnes* was isolated. The clinical signs were indistinguishable

from those with other causes of endophthalmitis. The behavior of acute *P. acnes* endophthalmitis appeared to be similar to coagulase-negative staphylococcal endophthalmitis (3). The visual results in these cases were good. All patients attained visual acuities of 20/200 or better (3, 4).

Four cases of late onset posttraumatic intraocular inflammation secondary to *P. acnes* infection have been reported. All these case reports exhibited chronicity and the onset of inflammation was delayed for a period of weeks to months (5-8). Friedman et al (5) reported one patient who developed endophthalmitis 6 weeks after trauma. Fish et al (6) reported one patient who developed intralenticular abscess surrounding two eyelashes that were embedded in the crystalline lens 3 weeks after sustaining penetrating trauma. Moore (7) reported a case of intralenticular abscess following penetrating trauma associated with eyelashes in the scleral wound and anterior chamber. The infection was noted 3 months after the injury. Stokkes et al (8) reported a patient who developed a lens abscess with an inflammatory iris nodule 6 months after a penetrating ocular injury. Similar to the present case, the visual prognosis of the previously reported cases was good (5-8), probably reflecting the relatively low virulence of *P. acnes* for the eye.

In conclusion, this case emphasizes the importance of considering *P. acnes* as a contributing factor in late onset intraocular inflammation in posttraumatic clinical setting. A high index of suspicion for low-grade infection is appropriate in such cases and should include a consideration of anaerobic organisms. This case also demonstrates the value of performing anaerobic cultures on all cases of late onset posttraumatic endophthalmitis. Our laboratory holds anaerobic cultures for at least 1 week of incubation until reporting them as no growth.

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