Editorial

Propionibacterium acnes endophthalmitis

Acute postoperative infectious endophthalmitis is one of the most serious complications of cataract surgery. Its poor visual prognosis justifies the adoption of an aggressive management approach. This includes obtaining immediate specimens of vitreous and aqueous for microscopic examination and culture, removing the bulk of the infectious agent by vitrectomy, and injecting intracameral antibiotics to which the causative organism is susceptible. With this approach useful vision may be salvaged.[1]

In 1976 the first report of postoperative endophthalmitis caused by *Propionibacterium acnes* appeared in the *American Journal of Ophthalmology*.[2] The authors had applied the protocol for investigating immediate postoperative infection to eyes with chronic relapsing low grade inflammation and had isolated this organism from the eye of a patient with suspected fungal endophthalmitis.

Subsequent reports have described a typical clinical picture.[3] A granulomatous uveitis presents weeks or months after uneventful extracapsular cataract surgery sometimes associated with hypopyon and with white plaques on the posterior capsule. It is initially responsive to topical steroids, but the inflammation recurs as soon as the steroids are withdrawn. Biopsy of vitreous, aqueous, or capsular bag contents have grown *Propionibacterium acnes*, a ubiquitous Gram positive bacillus which is grown on anaerobic culture of swabs from normal human conjunctiva.[4]

I am sure that most of us can recall patients who present with late onset uveitis in the operated eye. It is worrying to wonder how many of these might have been harbouring *Propionibacterium acnes* in their capsular bags. Despite the above reports there remains a natural hesitation to submit these eyes to further surgery. Most of us rely initially on a course of topical steroids to suppress the inflammation. The majority of cases reported so far appear to justify this approach. The treated eyes of patients with culture positive *Propionibacterium* endophthalmitis achieve a reasonable final visual acuity in spite of an initial delay in diagnosis and treatment.

If the inflammation persists despite the topical steroids vitreous samples must be taken. These should be submitted to extensive bacteriological investigation maintaining anaerobic cultures for a minimum of 9 days.

Postoperative inflammation is not a new phenomenon in extracapsular cataract surgery. It has been attributed to many different causes,[5] for example lens design, surgical manipulation, retained soft lens matter, reactions to chemicals on the intraocular lens surface (toxic lens syndrome), an immune reaction to lens protein (phacogenic uveitis), and infection. With the identification of *Propionibacterium acnes* in the vitreous of chronically inflamed eyes some authors[6] have come to wonder whether the organism may have a wider aetiological involvement. Infection may have been missed because it was never sought. Phacogenic uveitis is not thought to be infectious but it has been suggested that the *Propionibacterium* bacillus may act as an adjuvant to promote the host's immune response against his own lens protein.

A definitive plan for managing *Propionibacterium acnes* endophthalmitis has not yet been established. It seems appropriate to use an intravitreal injection of antibiotic (penicillin, clindamycin, or a cephalosporin) at the time of vitreous biopsy. Having cultured the organism one then has a variety of options. Some eyes have recovered good vision with a single intravitreal injection of antibiotic,[7] followed by topical and/or systemic treatment. Other eyes have needed complete removal of the capsular bag and contents and vitrectomy before the inflammation has subsided. It has been suggested that the chosen treatment approach should depend on the presenting visual acuity and the degree of intraocular inflammation,[8] reserving the extensive surgery for the more inflamed eyes. I hope that further advice will be forthcoming so that the rest of us may learn how to combat the infection with the least intervention thereby minimising the risk to already compromised eyes.

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