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Eye (2010) **24**, 943–944; doi:10.1038/eye.2009.228;
published online 4 September 2009

Sir,

***Propionibacterium acnes* endogenous endophthalmitis presenting with bilateral scleritis and uveitis**

Propionibacterium acnes is known to cause delayed-onset postoperative endophthalmitis.¹ Endogenous endophthalmitis, however, is very rare.^{2,3}

Case report

A 55-year-old healthy Chinese lady with no past medical or surgical history had a 1-week history of bilateral eye redness, blurring of vision, and floaters. On examination, she was septic, with fever of 39.0°C and seemed unwell. Her best-corrected visual acuities (BCVA) were 6/15 OD, 6/24 OS. She had diffuse non-necrotising anterior scleritis, anterior chamber cells and flare 2+, posterior synechiae of 270–360 degrees, and small dendritiform keratic precipitates OU, but no iris nodules were seen (Figure 1a–d). There was mild vitritis OU (Figure 2a and b). Intra-ocular pressures were normal. Screening blood tests revealed a raised total white cell count ($21.27 \times 10^9/l$) and erythrocyte sedimentation rate (103 mm/h). Other investigations for infective agents, including blood cultures, were non-contributory; whereas, an echocardiogram to rule out infective endocarditis should have been done. An aqueous sample taken at the slit-lamp with aseptic precautions was sent

Figure 1 Patient's right (a) and left (b) eyes with non-necrotising, diffuse anterior scleritis. Dendritic keratic precipitates were seen in both eyes (c = right, d = left), seen more clearly in the right, with anterior chamber cells 2+, flare 2+, and 360 degrees of posterior synechiae.

Figure 2 Posterior segment examination revealed mild vitritis in the right (a) and left (b) eyes. There was no evidence of chorioretinitis, vasculitis, macula oedema, or disc swelling. Posterior segment photos 18 months post-presentation with no evidence of inflammation in both eyes (c = right eye; d = left eye).

for Gram-staining, culture, and PCR analysis. The initial culture results after 1 week and PCR analysis were negative. She was treated empirically with intravenous (IV) ceftriaxone (1.5 g BD) for a week and oral doxycycline (100 mg BD) with oral prednisolone (40 mg/day). Topical prednisolone acetate (1% hourly) and oral ibuprofen (400 mg TDS) were added 5 days later. All initial culture results were negative. At 15 days after presentation, the aqueous sample cultured *P. acnes*. As her ocular inflammation worsened, she was treated with IV crystalline penicillin (3 g every 4 h) and topical moxifloxacin on a 3-hour routine to which she responded clinically within 2 days. Her BCVA was 6/9 OU at 18 months with no recurrence of ocular inflammation

(Figure 2c and d). However, the source of infection could not be identified.

Comments

This is the first reported case, to our knowledge, of *P. acnes* endogenous endophthalmitis with bilateral panscleritis, and anterior and intermediate uveitis. Previous reports of *P. acnes* endogenous endophthalmitis have been based on immunocompromised individuals.^{1,2} These cases presented with low-grade, granulomatous inflammation, which is dissimilar from our patient's presentation.^{3,4} Our patient's dendritiform keratic precipitates were suggestive of an infectious aetiology, prompting an aqueous sample culture and isolation of the agent. Although this may be a contaminant, the isolation of this fastidious organism and the rapid response to the second treatment regime makes this unlikely.

Bilateral scleritis is an unusual clinical manifestation of an endogenous infection, which may represent an immune-mediated response to an ocular or systemic infection. *P. acnes* can generate degradation enzymes and proteins that are immunogenic.⁵ This may account for the pathogenesis of our patient's clinical manifestations. Similar pathogenesis has been suggested in cases of ocular sarcoidosis, in which *P. acnes* was cultured from the vitreous.⁵ Although rare, the clinician should be aware that *P. acnes* might be a cause of such a clinical manifestation so that rapid, appropriate management may be instituted. With the development of new molecular techniques, we may be able to detect the contributions of microorganisms in the pathogenesis of 'idiopathic' ocular inflammation.

Conflict of interest

The authors declare no conflict of interest.

Acknowledgements

Contributions of Authors: CSP was involved in the design of the study, MA and CSP in the conduct of the

study, MA and CSP in the management, analysis, and interpretation of the data, and MA and CSP in the preparation, review, or approval of the manuscript. This study was carried out with approval from our Institutional Review Board (Singapore Eye Research Institute/Singhealth).

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Eye (2010) **24**, 944–945; doi:10.1038/eye.2009.194;
published online 31 July 2009