

Painful leg and loss of vision in a diabetic

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Abstract

We report a case of recurrent bacteraemia due to *Staphylococcus aureus* with associated pyomyositis and endophthalmitis in an insulin-dependent diabetic with chronic liver disease secondary to alcohol abuse.

Keywords

Staphylococcal; diabetes; endophthalmitis; pyomyositis; immunocompromised.

Case history

A 39-year-old man with insulin-dependent diabetes and alcoholic liver disease presented with a 2-week history of malaise and left calf pain and a 24 h history of blurred vision in his left eye. Three months earlier he had been hospitalized for 10 days with *Staphylococcus*

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Fig. 1. Showing a red conjunctiva with hypopyon within the anterior chamber of the eye.

aureus septicaemia. On admission he was pyrexial, tachycardic and had an ejection systolic murmur. There were signs of chronic liver disease plus hepatosplenomegaly. The left calf was swollen and tender. Visual acuity in the left eye was reduced to finger counting with a marked afferent pupillary defect. The eye was inflamed with a hypopyon (Fig. 1) and the fundus was obscured. Metastatic endophthalmitis was diagnosed, intraocular fluids samples were taken for culture and intravitreal amikacin plus vancomycin were administered.

MRI scanning revealed a $5 \times 5 \times 20$ cm collection in the lateral aspect of the left calf extending around the shaft of the fibula with no evidence of bone involvement (Fig. 2). Surgical exploration indicated the collection was arising from within muscle. *S. aureus* that was sensitive to methicillin was isolated from 3 sets of blood cultures and pus from the calf collection as well as the vitreal sample from the eye. Polymerase chain reaction (PCR) analysis demonstrated that all the *S. aureus* isolates were of the same strain (data not shown).

He received high-dose intravenous systemic anti-staphylococcal antibiotics for 3 weeks followed by a further 3 months of oral therapy with complete resolution of infection.

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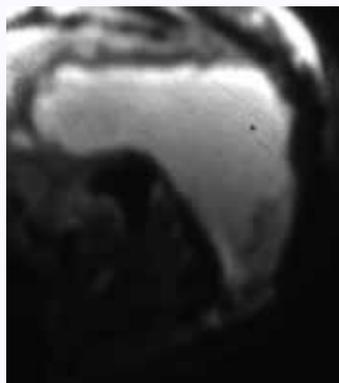


Fig. 2. Cross sectional MRI scan of the patient's left calf revealing a large fluid collection (arrow).

Initially his visual acuity improved but he later developed a retinal detachment, which recurred despite surgery and lead to permanent loss of vision in the left eye. He died from complications of his diabetes 1 year later.

Diagnosis

Endophthalmitis and pyomyositis due to *S. aureus*.

Unusual features

S. aureus is one of the commonest organisms responsible for community acquired bacteraemia and is increased in patients with immunodeficiency including diabetes and liver disease^[1]. *S. aureus* may seed many distant sites including bone, heart valves, liver, brain and rarely the eye. Bacterial endophthalmitis is infrequently seen in the antibiotic

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era and so the diagnosis may be missed. Endophthalmitis may occur following intraocular surgery or trauma to the eye or as a result of endogenous spread from infection elsewhere. Endogenous bacterial endophthalmitis is most commonly due to *S. aureus*, *Streptococcus* spp., or *Neisseria meningitides*^[2].

S. aureus is a high-grade pathogen able to invade and colonize many tissue sites. Experimental models of endophthalmitis reveal that bacterial cell wall components and secreted toxins from *S. aureus* cause inflammatory as well as infective damage to the eye^[3]. For this reason, patients with bacterial endophthalmitis are usually given systemic cortico-steroid therapy in addition to antibiotics—except in immunocompromised patients such as the man described in this report.

Pyomyositis refers to deep muscle abscess formation and is common in the tropics but less frequent in temperate climates. Increasingly, pyomyositis has been reported in immunocompromised adults including those with diabetes^[4].

Lessons

S. aureus bacteraemia with metastatic spread is commoner in diabetes and may relapse following short-course antibiotic therapy.

Infection should be considered in the differential diagnosis of acute visual loss in diabetics^[5].

A high index of suspicion with prompt referral and combined ophthalmologic/medical management are required for the therapy of bacterial endophthalmitis.

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