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Sir,

Preseptal cellulitis in systemic onset Juvenile Idiopathic Arthritis

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The aetiology of preseptal cellulitis is infective in the majority of cases. Systemic juvenile idiopathic arthritis (JIA), previously known as 'Still's disease', is a variety of childhood arthritis with rare eye involvement. We report a case of systemic onset JIA associated with bilateral preseptal cellulitis, the clinical course of which paralleled the systemic condition suggesting that the underlying pathogenesis was of noninfectious inflammation.

Case report

A 10-year-old girl presented with a 1-week history of a painful right knee and restricted mobility 7 days after developing an ear infection which had been treated with oral amoxycillin. This settled and she then developed swelling around her left eye, general malaise, and a high fever. The left knee became progressively more painful, and 1 day prior to admission her left elbow became swollen and tender. Her past history was unremarkable and there was no significant family history.

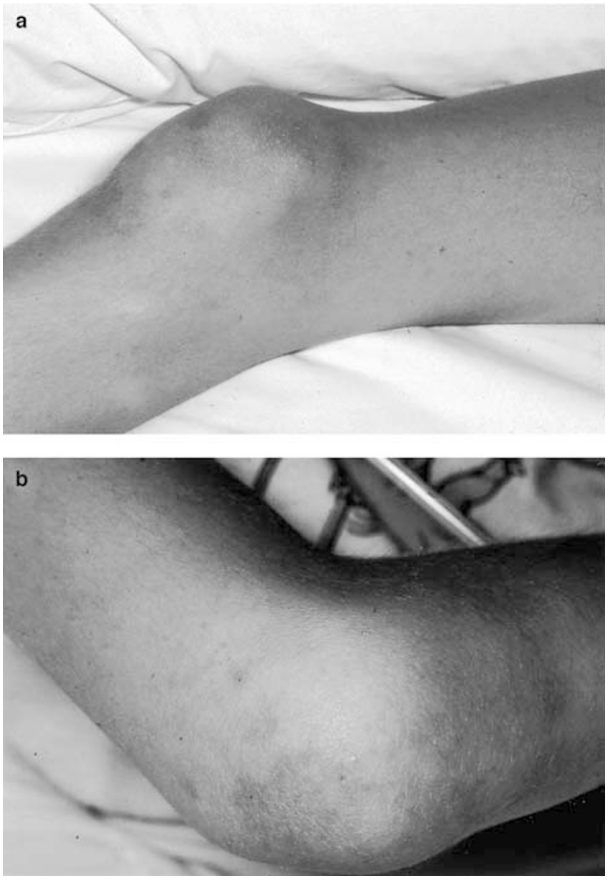

Figure 1 (a) Appearance of right knee joint swelling. (b) Appearance of left elbow swelling and receeding rash.

On admission, she was unwell with a pyrexia of 39°C. Examination of the orbits showed left-sided periorbital erythema and oedema but no proptosis and normal ocular movements. The right side was normal. Visual acuity was recorded at 6/6 in both eyes and there was no colour desaturation or afferent pupillary defect. The anterior segments were normal and fundoscopy showed healthy optic discs. Examination of her joints revealed a tender swollen left knee (Figure 1a), which was held in flexion, and a swollen painful flexed left elbow (Figure 2b). The other joints were normal. She was noted to have an ejection systolic flow murmur at the left sternal edge and abdominal examination revealed hepatomegaly but no splenomegaly. The rest of the examination was normal.

A full blood count showed the haemoglobin to be 10.6 g/l, platelets 697×10^9/l, and white cell count 21.4×10^9/l (17.5×10^9/l polymorphs). The erythrocyte sedimentation rate (ESR) was 90 mm/h. Blood cultures and bacterial swab of the left eye were negative. Aspiration of the left knee and left elbow revealed 3+ white cells in the synovial fluid with no organisms on

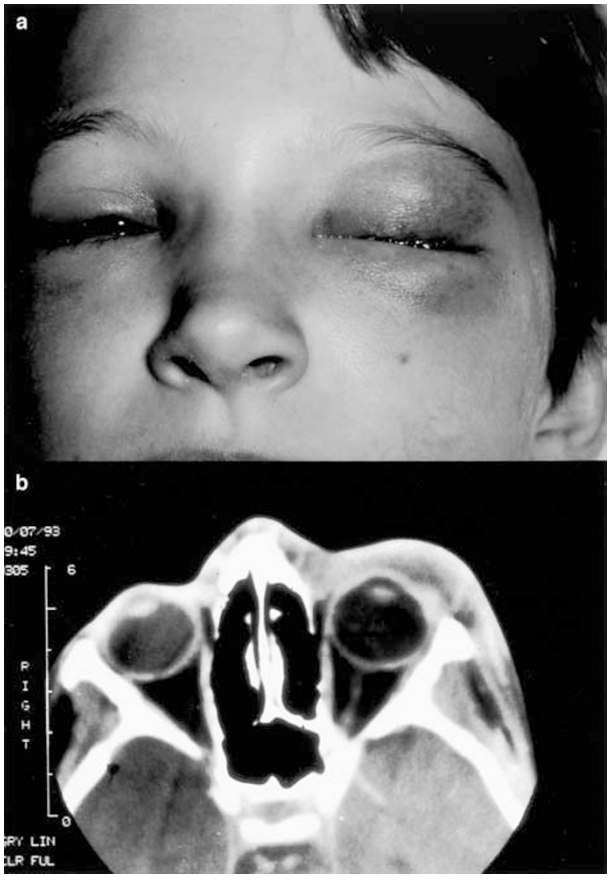

Figure 2 (a) Appearance of bilateral preseptal cellulitis. (b) CT scan showing left preseptal soft tissue swelling.

Gram stain or culture. A bone scan revealed minimal increased uptake around the right knee suggestive of an inflammatory arthritis. A CT scan of the orbits revealed left periorbital soft tissue swelling involving only the preseptal compartment and extending onto the cheek. The paranasal sinuses were clear. Autoantibody screen, including rheumatoid factor and antinuclear antibody (ANA), was normal. The antistreptolysin 'O' (ASO) titre was raised at 1:1600 and streptococcal anti-DNAse B at 1:1920.

An initial diagnosis of multifocal septic arthritis was made and treatment with intravenous (i.v.) flucloxacillin, fucidin, and benzyl penicillin commenced. After 2 days, there was no response and the antibiotics were changed to i.v. chloramphenicol, azithromycin, and metronidazole. The patient, however, continued to deteriorate and became systemically unwell, with arthropathy spreading to involve hips, shoulders, knees, and elbows. A swinging pyrexia developed with axillary lymphadenopathy and an annular erythematous skin rash over the trunk and proximal extremities was noted. An echocardiogram revealed pericarditis with no evidence of endocarditis or myocarditis. Subsequent repeat blood cultures and throat swabs were negative. At 11 days after admission, the patient developed additional right-sided preseptal cellulitis without evidence of orbital involvement (Figure 2a).

The finding of high ASO titres in conjunction with a high ESR, fever, and arthropathy led to a presumptive diagnosis of rheumatic fever but there was no response to high-dose aspirin (500 mg 5 times/day) and i.v. benzyl penicillin (1.2 g 6 times/day), which were continued for 8 days at which stage oral amoxycillin was substituted. At 5 weeks after admission, there was a marked deterioration in her clinical state with a spiking pyrexia and a painful left hip. A review of the clinical and laboratory features indicated systemic JIA as the more likely diagnosis. High-dose systemic steroids (prednisolone 60 mg o.d.) led to a rapid improvement in her symptoms. The arthritis and her general health improved and the bilateral preseptal cellulitis gradually resolved. She was weaned off steroids over the next 4 weeks with continuing improvement in her arthralgia and general health. Her ESR came down to 8 mm/h and the ASO titre to 400 i.u./l. During 7 years of follow-up, she remained fit and well without recurrence.

Comment

We have described the clinical details of a girl who had the rare association of bilateral preseptal cellulitis and febrile systemic arthritis. In a series of 137 cases of periorbital cellulitis in children, 71% had the preseptal type.[1] The aetiology of preseptal cellulitis is infective in the majority of cases and the most common organisms are staphylococci and streptococci. *Haemophilus influenzae* is the most commonly implicated pathogen in young children.[2] The vast majority of cases respond rapidly to antibiotics. Orbital cellulitis is differentiated by additional clinical features such as diminished visual acuity, colour desaturation, and restricted ocular motility. Orbital computerised tomography is helpful in assessing postseptal involvement,[3] particularly when clinical examination is difficult (Figure 2b). Periorbital oedema was a differential diagnosis in this case, but the presence of pain and erythema helped in differentiation.

Many diseases may present with arthritis in childhood. These include JIA, rheumatic fever and other infectious or reactive arthropathies, and blood dyscrasias. JIA is a term that has been introduced to unify the conflicting classifications used in Europe and North America, where the terms juvenile chronic arthritis (JCA) and juvenile rheumatoid arthritis (JRA) were in use.[4,5] There are several clinical patterns of JIA that share the essential

characteristics of an arthritis presenting before the age of 16, lasting for at least 6 weeks in which no defined cause can be found. The systemic form of JIA is characterised by arthritis and quotidian (swinging) pyrexia accompanied by one or more features. These include an evanescent erythematous rash; hepatomegaly or splenomegaly; serositis (eg pericarditis) and lymphadenopathy. A subgroup without persistent arthritis is recognised, where a single episode is followed by remission for at least 2 years. Uveitis is not a feature and ANA testing is negative.

The main differential diagnosis in this case was acute rheumatic fever or poststreptococcal reactive arthritis, although the latter is unusual in childhood.[6] The polyarthritis, pericarditis, and raised antistreptococcal antibody levels were initially suggestive. However, the pattern of fever, failure to respond to adequate doses of aspirin, and persistence of inflammation in individual joints were not typical. The raised antistreptococcal antibody levels may have indicated coexistent recent streptococcal infection, but have also been reported in JIA and have been used to monitor treatment.[7] Preseptal cellulitis has not, to our knowledge, been previously reported in association with JIA.

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Sir,

Iatrogenic retinal tear and vitreous haemorrhage with Rycroft cannula during phacoemulsification cataract surgery

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We report the case of a 75-year-old patient who suffered an unusual complication during routine phacoemulsification cataract surgery under peribulbar block.

Case report

Towards the end of routine phacoemulsification cataract surgery after insertion of the intraocular lens implant, the anterior chamber was irrigated using balanced salt solution loaded in a 2 ml non-luer lock polypropylene syringe (Becton Dickinson, ref 300185) with a 27G Rycroft cannula (Steriseal, ref 1273A) attached. During the injection, the cannula became disinserted from the syringe with sufficient force to pass behind the lens implant, through the posterior lens capsule and vitreous and into the inferotemporal retina.

The result was an immediate vitreous haemorrhage. At this point, the cannula was retrieved and the eye closed. A B scan revealed vitreous and subretinal haemorrhage with probable retinal tear.

Six days later the patient underwent vitrectomy, and at the time of surgery an inferotemporal retinal detachment and accompanying tear, presumably caused by the