

signal changes to suggest infarction and there was no accompanying focal neurological deficit.⁶ However, magnetic resonance angiography revealed distortion of the vasculature on the right side following surgery.

Whilst diagnostic features of an optic tract lesion can include a contralateral relative afferent pupillary defect and 'bow-tie' optic atrophy,^{7,8} these were not seen in our patient, but involvement by tumour of both optic nerves and chiasm are likely to have complicated these signs. It is perhaps more surprising that visual acuity and colour vision have been so well preserved.

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Sir,
***Neisseria gonorrhoeae*: A Previously Unreported Cause of Pre-septal Cellulitis**

Orbital cellulitis typically occurs following dental or sinus infections. Limitation of infection to the pre-septal tissues, at least initially, occurs when factors such as infected lid lesions, trauma or conjunctivitis

are causal. The frequency of conjunctivitis as the precipitant for pre-septal cellulitis is not known; however, *Moraxella* has been isolated from conjunctival swabs in a patient with pre-septal cellulitis.¹ *Neisseria gonorrhoeae* can cause acute purulent conjunctivitis in neonates (one cause of ophthalmia neonatorum), children and adults. Though rare in adults, rapid progression to ulcerative keratitis and even perforation can occur, especially with penicillinase-producing strains.²⁻⁵ *N. gonorrhoeae* has not been reported as a cause of pre-septal cellulitis.

Case Report

A 31-year-old homosexual man presented with a 2 day history of acute purulent conjunctivitis in his right eye. He had been started on fusidic acid eye drops by a casualty department on the previous day. There was no history of trauma, foreign body injury or lid lesions. On examination his visual acuity was 6/9 right eye, 6/5 left eye. There was moderate periorbital erythema and swelling, with associated marked conjunctival injection, chemosis and purulent discharge. Right eye movements in all directions were limited by pain. Pupil responses were normal and there was no obvious proptosis. Ocular examination was otherwise normal. A presumptive diagnosis of right orbital cellulitis was made. He was therefore admitted and commenced on intravenous Magnapen (Beecham; flucloxacillin 500 mg/ampicillin 500 mg) q.d.s. and intravenous metronidazole 500 mg t.d.s. A CT scan was performed the day after admission because initial treatment response was poor. This demonstrated the inflammatory changes to be exclusively pre-septal (Fig. 1). There was no

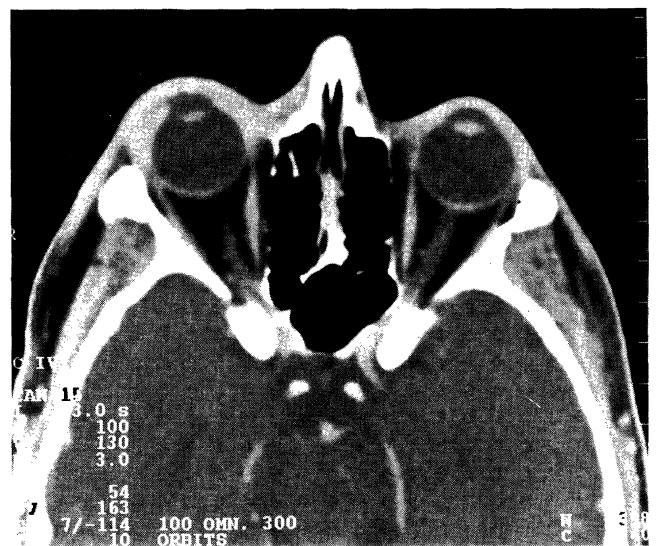


Fig. 1. CT scan of head and orbits showing pre-septal soft tissue involvement in the right eye. There is apparent proptosis due to lid oedema and rotation of the film. (Provided by the Department of Medical Illustration, St James's University Hospital.)

sub-periosteal abscess and his paranasal sinuses were clear. Apart from a mild neutrophilia of $8.82 \times 10^9/l$ (normal range $2.0-7.5 \times 10^9/l$) his full blood count and plasma viscosity were normal. Blood cultures were negative.

Two conjunctival swabs were taken on admission: one in the casualty department and one on the ward. No smear was taken for Gram staining. The cultures from the conjunctival swabs showed a heavy growth of Gram-negative cocci, identified as *Neisseria gonorrhoeae* and later confirmed by a reference laboratory. The findings were reported 5 days after samples were taken and the report from the reference laboratory returned a week later. The causative isolate was found to be sensitive to penicillin and other antimicrobials tested including ampicillin, erythromycin, cefuroxime and chloramphenicol.

The patient subsequently admitted to a treated episode of gonorrhoea 'years ago'. He denied any recent genito-urinary symptoms. Urethral, rectal, pharyngeal and conjunctival swabs were taken within 2 weeks, when reviewed by the genito-urinary physicians, and were negative for both *Neisseria gonorrhoeae* and *Chlamydia trachomatis*. Contact tracing was also carried out by the department of genito-urinary medicine. The patient's own HIV status was negative when screened 6 months previously but that of his male partner was positive. He declined a repeat HIV test. A syphilis screen was negative. The pre-septal cellulitis slowly improved over a period of 5 days. He was discharged on topical chloramphenicol and a 1 week course of oral Magnapen and metronidazole. Complete resolution of conjunctival injection took 5 weeks. Visual acuity in his right eye returned to 6/5. A repeat conjunctival swab was negative. He has remained well over a follow-up period of over 4 months. There was no evidence of infection in the left eye at any stage.

Discussion

Pre-septal cellulitis due to *Neisseria gonorrhoeae* infection is, to our knowledge, previously unreported. This case probably represents autoinoculation from an asymptomatic episode of genital gonorrhoea. The resultant purulent conjunctivitis in the absence of any demonstrable sinus infection is the presumed precursor for the patient's pre-septal infection. The possibility of opportunistic infection remains. His sex, age and clinical features, namely of an acute purulent conjunctivitis, chemosis, periocular oedema and eye movement restriction with pain and tenderness, mirror reported characteristics.³

Iridocyclitis can occur at the same time as keratoconjunctivitis and has also been reported in association with arthritis and prostatitis during genital infection.^{4,5}

Neisseria gonorrhoeae is an intracytoplasmic Gram-negative diplococcus found within polymorphonuclear leucocytes (PMNLs) and may be isolated from smears or cultures of conjunctival discharge, synovial fluid, skin lesion aspirate and blood. The organism attaches to epithelial surfaces and invades intracellularly, which may account for its ability to gain access to pre-septal tissues. Rapid progression from purulent conjunctivitis to corneal ulceration and perforation can occur and has become more frequent with the greater prevalence of penicillinase-producing strains of *Neisseria gonorrhoeae* (PPNG).^{2,6} Whilst a Gram stain on a smear of conjunctival discharge might have suggested an atypical pathogen earlier in this case, the release of a report would have awaited culture results with a follow-up report of antimicrobial sensitivities.

Although both penicillin-resistant and multi-drug-resistant strains are reported, the organism is typically sensitive to penicillin.^{7,8} In cases of penicillin resistance the use of spectinomycin, azithromycin or third-generation cephalosporins such as ceftriaxone is advocated.^{9,10} Treatment should be prolonged for at least 1 week, as compared with the one-off dosages used for urethral infection.¹¹

This case suggests it is worth while taking conjunctival swabs from all patients with suspected pre-septal or orbital cellulitis. Identification of the unusual pathogen described in this case would not have been possible without the benefit of the conjunctival swab. In sexually active patients with periocular infection *Neisseria gonorrhoeae* should be considered as a possible causal organism, especially if there is a previous history of sexually transmitted diseases. In such cases genito-urinary assessment is mandatory.

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Sir,

Paediatric Ophthalmology in West Mostar, Bosnia

During 1992–1994 the war in Bosnia-Herzegovina crippled many towns and produced many refugees and displaced persons. Since May 1993, the East Bank of Mostar has been without adequate food, running water or medical supplies. Eighty per cent of the buildings have been destroyed and its population has existed mainly on international humanitarian aid. Many of the children in East Mostar have spent around 10 months living in basements.

As a result of the conflict, the Department of Paediatrics, Keele University, in conjunction with UNICEF, has supported a team of paediatricians

who have provided medical care for the children in Mostar. Children found to have ophthalmic problems were registered for subsequent re-evaluation. This report contains the results of an ophthalmologist's assessment of the children living on the East Bank of Mostar.

Materials and Methods

Between May and September 1994, Keele University paediatricians established a screening programme that aimed to examine all children in the Mostar region. A total of 5823 children, 16 years or under, were assessed in Mostar of which 3851 lived on the East Bank, 49% of which were female. Comprehensive civilian records suggest that about 90% of all children were examined. The age of the population is given in Fig. 1. There are slightly fewer children than expected under the age of 5 years due to the reduced birth rate, increased infant mortality and relocation of some mothers with very young children.

This programme utilised three mobile health centres that carried comprehensive examination and treatment equipment including an ophthalmoscope. The paediatric assessment was conducted by paediatricians of consultant or registrar status and included a full history and a complete systemic and ophthalmic examination. All general and ophthalmic information was prospectively and uniformly recorded using standardised sheets and logged onto a computerised database by the examining paediatrician, typically that evening. Children who were prospectively identified for subsequent ophthalmic assessment had: any history of ophthalmic disease, an active ophthalmic problem, or the probability of a problem that required confirmation. Of the 3851 children screened from the East Bank of Mostar, 135

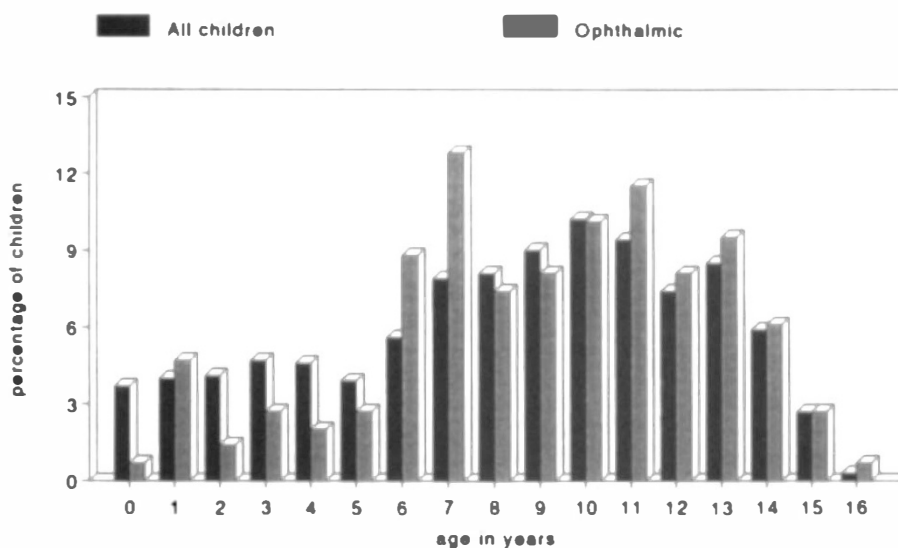


Fig. 1. The age distribution of all children attending screening in East Mostar (n = 3851) as compared with the 135 children identified as having ophthalmic problems.