

An unusual cause of an epidural abscess

Sebastian J van Hal and Jeffrey J Post

A previously well 30-year-old man presented with severe progressive back pain, joint pain and fever. Magnetic resonance imaging confirmed an epidural abscess. A sexual history revealed both risk factors for and previous symptoms of a sexually acquired infection. Neisseria gonorrhoeae was isolated from a rectal swab and from a wrist aspirate, consistent with disseminated gonococcal infection. The epidural abscess resolved clinically and radiologically after treatment for N. gonorrhoeae with ceftriaxone. (MJA 2004; 180: 40-41)

LOCALISED BACK PAIN and fever are important symptoms, which may indicate an epidural abscess or vertebral osteomyelitis. In assessing such a patient, a sexual history is often omitted, but it can provide useful information, as illustrated here.

Clinical record

Presentation (Day 0): A 30-year-old man presented to hospital with an 8-day history of progressive severe thoracic back pain and a 5-day history of left knee pain. The back pain had occurred suddenly after lifting weights, and radiated to the right chest wall. Chiropractic manipulation and paracetamol had been unsuccessful in relieving the pain. His family history in relation to rheumatological or inflammatory disorders was unremarkable, and he had never used intravenous drugs. He had no symptoms of fever, conjunctivitis, urethritis, rash, early morning joint stiffness or neurological dysfunction.

On initial examination he looked well but had a slightly raised temperature (37.8°C). There was tenderness over the fifth to the seventh thoracic vertebrae, and his left tibiofibular joint was erythematous and warm. Examination of the skin and of musculoskeletal, neurological and genitourinary systems showed no abnormalities.

Initial investigations revealed a neutrophil leukocytosis of $9.5 \times 10^9/L$ (reference range [RR], $1.7-7.0 \times 10^9/L$) and raised inflammatory markers: C-reactive protein, 73 mg/L (RR, < 3 mg/L); and erythrocyte sedimentation rate, 47 mm/h (RR, 0-10 mm/h). Test results for haemoglobin concentration, platelet count, serum electrolytes, renal and liver function, rheumatoid factor and antinuclear antibody were within normal limits. Blood cultures were negative.

The patient was admitted to hospital after a magnetic resonance imaging scan of the thoracic spine revealed an epidural mass at T6/T7 level (Figure A, B).

Day 1: A computed-tomography-guided biopsy of the epidural collection was undertaken. This revealed an acute

inflammatory exudate with neutrophils. Cytological examination did not detect malignant cells, and no organisms were seen on Gram stain.

The patient's left wrist became painful, red and swollen, and an infectious diseases consultation was arranged. A sexual history revealed that the patient had experienced mild anal pruritis associated with a white anal discharge 3 months before presentation. This occurred after he had had sexual intercourse with multiple male partners, and it resolved without treatment. Microscopic examination of the fluid aspirated from the wrist joint revealed numerous pus cells and gram-negative diplococci on Gram stain (Figure C). Urethral, rectal and throat swabs were taken.

A provisional diagnosis was made of disseminated gonococcal infection with an epidural abscess. Therapy was initiated with ceftriaxone 2 g intravenously twice a day. A single dose of 1 g azithromycin orally was also given to treat possible associated *Chlamydia trachomatis* infection. Serological tests for sexually transmitted diseases, including syphilis, HIV and hepatitis B virus infection, were negative. The patient's regular sexual partner was treated with ceftriaxone 250 mg intramuscularly and azithromycin 1 g orally. Further contact tracing was not possible as the identity of other sexual partners was unknown.

Day 3: Culture of the wrist aspirate and rectal swabs isolated *Neisseria gonorrhoeae* that was fully sensitive to ciprofloxacin and ceftriaxone, but resistant to tetracycline and penicillin. The urethral swab, throat swab and the epidural aspirate were sterile. Most of the patient's symptoms resolved 48 hours after starting ceftriaxone.

Course: The patient was discharged from hospital after 7 days and instructed to take oral ciprofloxacin 500 mg twice a day for 4 weeks.

At review 1 month later: The patient's symptoms had completely resolved and a repeat magnetic resonance imaging scan revealed total resolution of the epidural collection. The patient elected to go to his local doctor for follow-up serological testing.

Discussion

Epidural abscesses are rare and in most cases are caused by *Staphylococcus aureus*.¹ To our knowledge, this is the first reported case of disseminated gonococcal infection present-

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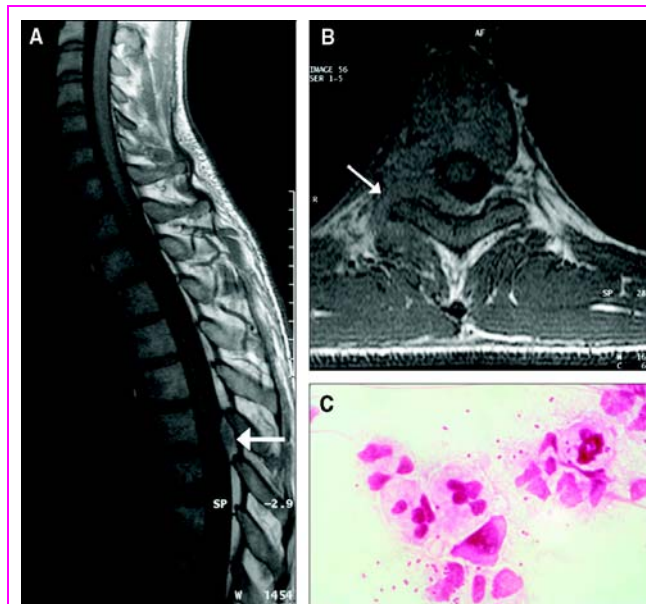
ing as an epidural abscess. With an increasing incidence of *N. gonorrhoeae* infection in our community, clinicians need to be aware of the manifestations of disseminated gonococcal infection, and to consider it in the differential diagnosis of inflammatory syndromes in sexually active patients.

Disseminated gonococcal infection is an uncommon manifestation of *N. gonorrhoeae* infection. It most commonly follows asymptomatic mucosal infections and is more common in women (female: male ratio, 3:1).² The reported incidence of disseminated infection ranges from 0.5% to 3% of mucosal infections,³ and its incidence in Australia is increasing (predominantly in men who have sex with men).⁴

Patients typically present with either a triad of tenosynovitis, dermatitis and polyarthralgia without purulent arthritis, or purulent arthritis without skin lesions.² These two syndromes are not exclusive and some overlap can occur. The most commonly involved joints are the knee, the elbow, and the joints distal to these. Other reported complications are rare and include osteomyelitis,⁵ meningitis,⁶ and overwhelming sepsis.⁷ The bones typically involved in gonococcal osteomyelitis are those adjacent to the sites of gonococcal arthritis, as the organism spreads through the synovium into the adjacent bone.

In our patient, *N. gonorrhoeae* was isolated from the wrist and rectum, confirming disseminated gonococcal infection, which was temporally associated with an epidural abscess. Although *N. gonorrhoeae* was not isolated from the site of the abscess, complete symptomatic and radiological resolution followed antimicrobial therapy directed against *N. gonorrhoeae*.

For the investigation of symptoms of localised back pain and fever, magnetic resonance imaging is the investigation of choice.⁸ Appropriate microbiological sampling is essen-



A: T1-weighted sagittal magnetic resonance imaging scan through the cervical and thoracic spine shows an epidural abscess lying posteriorly to the T6 vertebral body (arrow).

B: T1-weighted axial magnetic resonance imaging scan at T6 level shows a poorly defined extradural space-occupying lesion, extending through the right neural exit foramen (arrow) with a small paravertebral component. There was an associated effusion within the facet joint (not shown) and no evidence of bony erosion, destruction or oedema.

C: Gram stain of wrist aspirate, revealing numerous polymorphs and gram-negative intra- and extracellular diplococci.

tial to determine the aetiological agent and guide antimicrobial therapy. Our case illustrates the importance of obtaining a sexual history, both for the differential diagnosis and for selecting investigations to perform.

The recommended empirical treatment for *N. gonorrhoeae* infection in Australia is ceftriaxone, as more than 5% of isolates are resistant to penicillin, ciprofloxacin and tetracycline.⁹ Screening for other sexually transmitted infections, and contact tracing and treatment of sexual partners are important to control epidemics.

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Competing interests

None identified

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