Vacuum sign in spondylodiscitis due to *H. aphrophilus*

**Sir:** *Haemophilus aphrophilus* is a Gram negative, capnophilic, slow growing bacillus. In human disease this organism is an uncommon cause of bacterial endocarditis and, rarely, brain abscess, osteomyelitis, sinusitis, peritonitis, pneumonitis, epidural abscesses. We report a case of spondylodiscitis due to *H. aphrophilus*, in which diagnosis was delayed because of the presence of a vacuum phenomenon in the intervertebral disc space, initially interpreted as non-infectious disease.

A 67 year old man presented with a three week history of increasing low back pain associated with fever of 38°C. Eight days previously he had been treated for a respiratory tract infection with 1 g of amoxicillin/day. A physical examination showed he was normal except for severe lumbar stiffness. His temperature was raised to 38.5°C. Routine laboratory tests showed leukocytosis (10.5×10^3 white blood cells/l) and a raised erythrocyte sedimentation rate (60 mm/h). Routine x ray examination of the lumbar spine showed narrowing of the L4-L5 and L5-S1 discs. Computed tomography confirmed the absence of bone lesions and showed a vacuum phenomenon at the L4-L5 level, which was interpreted as a degenerative lesion (fig 1). A bone scan (technetium-99m) showed a slightly increased uptake at L4-L5. The search for a septic process proved to be negative in urine, blood, sputum, and in pharyngeal and buccal swabs. Multiple investigations for a malignant neoplasm or a haematological malignancy gave negative results showing that the pain was not due to such lesions. Repeated serological tests for Lyme disease and HIV, and Wright and Widal-Felix tests were negative. The intradermal tuberculin was negative.

Owing to the lack of improvement and the persistent fever during this long hospital admission, a lumbar puncture was performed. It showed a raised cerebrospinal fluid protein concentration of 2.4 g/l with 97 cells, containing 60% lymphocytes. The cerebrospinal fluid remained sterile on various culture media, however. Repeated x ray examination of the lumbar spine, performed three weeks after the initial admission to hospital, showed further narrowing of the L4-L5 disc space with erosions of adjacent bone end plates of the L4 and L5 vertebrae suggesting spondylodiscitis. Computed tomography confirmed the lesions with swelling of the surrounding soft tissues (fig 2).

Results of two dimensional echocardiography were normal. Culture of a discovertebral biopsy specimen showed *H. aphrophilus* on CO2 enriched medium. The patient was then treated with anti-biotics: intravenous pefloxacin (800 mg/day) and gentamicin for the first four weeks followed by oral pefloxacin alone for another eight weeks. Currently (six months later) the patient is walking and has no back pain.

The most interesting point in this case was the misdiagnosis due to the presence of a vacuum phenomenon. The presence of a vacuum phenomenon in the intervertebral disc space usually confirms the diagnosis of degenerative disease and is useful in eliminating the diagnosis of infection. However, radiolucent collections are rarely seen in infections, essentially when the organism produces gas as a result of its metabolism, a condition associated with *H. aphrophilus* which requires high concentrations of CO2 for its growth. Therefore, the presence of a vacuum phenomenon may lead to a false sense of security. In such cases magnetic resonance imaging may detect the spondylodiscitis earlier.

*H. aphrophilus* is a commensal organism found in oral flora, especially in the mouth (interdental and subgingival plaque). An association between infections due to *H. aphrophilus* and the oropharynx and between such infections and a previous history of dental disease or manipulation has been previously reported. A search of publications found only five reported cases of osteoarticular infections due to *H. aphrophilus*, including two cases of spondylodiscitis and one case of spinal epidural abscess. *H. aphrophilus* is reported to be sensitive to a broad range of commonly used antibiotics, including fluoroquinolones as in our case.

**Figure 1** Gas in the L4-L5 intervertebral disc space shown by computed tomography.

**Figure 2** Computed tomography scan obtained three weeks after admission to hospital showing multiple bone erosions of the superior vertebral end plate of L5 with swelling of the surrounding soft tissues.

Idiopathic orbital myositis: treatment with cyclosporin

**Sir:** Idiopathic orbital myositis is a relatively rare variant of orbital pseudotumour. A search of published work did not disclose any references to the management of idiopathic orbital myositis with cyclosporin. Similarities between the muscle lesions in this process and in polymyositis (recognised to be successfully treated by this drug), however, led to our decision to start cyclosporin treatment of a patient with steroid resistant idiopathic orbital myositis.

In December 1987 a 31 year old woman experienced an episode of right eye pain with redness as well as swollen lids and conjunctiva. Orbital movements were restricted and other symptoms were noted and results of a clinical examination were entirely normal. Results of the following laboratory tests were normal: blood count, erythrocyte sedimentation rate, glucose, urea nitrogen, electrolytes, serum protein electrophoresis, bilirubin, alkaline phosphatase, serum muscle enzymes, serum complement, cryoglobulins, antinuclear antibodies, rheumatoid factor, and thyroid function. Computed tomography (CT) scanning detected a fusiform enlargement of the right internal rectus muscle extending anteriorly to affect the tendon inserting on the globe (figure A). No left orbit abnormalities were seen (figure A). Rapid improvement followed the start of prednisone treatment (30 mg/d) in March 1988, but all attempts to reduce the steroid dose resulted in a new burst of activity. For this reason, and owing to the appearance of hyperglycaemia and signs of hypercorticism, azathioprine (100 mg/d) was added to the treatment. Further attempts to taper the steroid dose invariably met with a recurrence of the process. In September 1989, after another relapse following the withdrawal of steroids but not azathioprine, the treatment was changed to oral cyclosporin (3.5 mg/kg daily). The clinical manifestations immediately improved and five months later the patient was asymptomatic and no adverse secondary effects had been recorded. A new CT scan showed complete regression of the myositis (figure B).

Orbital pseudotumours are a group of noneoplastic processes that produce intraorbital mass lesions. Orbital idiopathic myositis, a subgroup of orbital pseudotumour, is characterised by inflammatory infiltration of one or more extraocular muscles. Although

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