Vacuum sign in spondylodiscitis due to *H. aphrophilus*

**SIR:** Haemophilus aphrophilus is a Gram negative, capnophilic, slow growing bacillus. It is a common organism in the upper respiratory tract and is usually associated with respiratory tract infections. In the case presented, a 67-year-old man presented with a 3-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 × 10⁹ 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 L4-5 and L5-S1 discs. Computed tomography confirmed the absence of bone lesions and showed a vacuum phenomenon at the L4-5 level, which was interpreted as a degenerative lesion (fig 1). A bone scan (technetium-⁹⁹m) showed a slightly increased uptake at L4-5. The search for a septic process proved to be negative in urine, blood, sputum, and 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 intra-articular tuberculosis 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 L4-5 disc space with erosions of adjacent bone end plates of the L4 and L5 vertebrae suggesting osteomyelitis. 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 active antibiotics: intravenous pefloxacin (800 mg/day) and netilmicin 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 material and dental 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 review 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 in our case.

**Figure 1** Gas in the L4-5 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 plates 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 of the present case with other reports of myositis and in polymyositis (recognised to be successfully treated by this drug) and, 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 impaired and, in 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, alka line 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 anterior lacrimal crest. 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 intraconal mass lesions. Idiopathic orbital myositis, a subgroup of orbital pseudotumour, is characterised by inflammatory infiltration of one or more extraocular muscles. Although

7. Gas in the L4-5 intervertebral disc space shown by computed tomography.
13. Gas in the L4-5 intervertebral disc space shown by computed tomography.
its origin remains unclear, immunological mechanisms have been postulated. Seldom has orbital myositis been reported in association with autoimmune diseases, such as systemic lupus erythematosus, Wegener's granulomatosis, or viral syndrome. The cardinal feature of this disease is an acute, afebrile, unilateral onset with bulbar pain intensified by ocular movement. Alternatively, there may be ophthalmoplegia, chemosis, proptosis, blepharoptosis, and conjunctival infection. Differentiating from other orbital pseudo-tumors (especially from thyroid ophthalmopathy, carotid-cavernous fistula, orbital cellulitis, and tumors of the orbit) has been simplified by the advent of CT and nuclear magnetic resonance imaging. A fast and widespread affection of the affected muscle is usually detected in a CT scan: extension of this process to the zone of insertion into the ocular globe (tendon sign); although not consistently found, is specific for idiopathic orbital myositis and is not seen in dysthyroid myopathy. In contrast with the latter disorder, idiopathic orbital myositis is usually unilateral and only one muscle is affected (generally the internal rectus). Idiopathic orbital myositis responds rapidly to steroid treatment with no residual sequelae. Nevertheless, some patients have a chronic and recurrent course with fibrotic muscle transformation and permanent loss of ocular motility. Clinical and radiological features in our patient were absolutely characteristic of idiopathic orbital myositis. However, the multiple relapses which occurred upon attempting to cut back the steroids, even when associated with azathioprine, made us look for an alternative treatment. The use of cyclosporin in ophthalmic Graves' disease is well documented, but no references have been made to its use in idiopathic orbital myositis. Reported favourable results obtained in patients with polymyositis, and our own experience, led us to use it successfully in our patient. We consider cyclosporin to be a valuable alternative for patients who develop dependency on steroids or who cannot tolerate or are resistant to such treatment.


Non-Hodgkin's lymphoma: initial manifestation

SIR: Skeletal involvement frequently occurs in malignant lymphoma, but monarthritis and polyarthritis are uncommon and are usually considered to be synovial reactions secondary to adjacent bone disease. We report the case of an elderly woman who presented with seronegative symmetrical synovitis and pitting oedema, resembling the 'RS3PE' syndrome described by McCarty et al, in whom non-Hodgkin's lymphoma became apparent subsequently.

A 63 year old woman presented in November 1989 with sudden onset of swelling of her metacarpophalangeal joints, knees, and feet; morning stiffness of hands of more than one hour; and oral ulcerations. Examination showed tenderness or swelling, or both, of all hand joints, flexor digitorum tendons, wrists, carpal joints, knees, and tarsal joints. Pitting oedema of the dorsum of hands and feet was seen bilaterally. There was no evidence of lymphadenopathy or hepatosplenomegaly. Roentgenograms of the hands and feet showed soft tissue swelling but no erosions or joint space narrowing. Results of routine laboratory studies were normal. Rheumatoid factor, anti-nuclear antibodies, and precipitin tests for antibodies to Sm, mRNP, Ro, and La antigens were absent. C3, C4, and lactate dehydrogenase were normal.

She was treated with hydroxychloroquine 200 mg twice a day, salicylates in anti-inflammatory doses and, later, with prednisone 5 mg daily, without symptomatic improvement.

In March 1990 several cervical, axillary and inguinal lymph nodes became enlarged, her temperature rose to 38·3-39·2°C, and she lost weight progressively. Results of laboratory tests were negative or normal, except for lactate dehydrogenase: 250 U/ml (normal range 83-157 U/ml) and erythrocyte sedimentation rate: 89 mm/hour. A biopsy specimen of a laterocervical lymph node showed diffuse large cell lymphoma (figure 2) and synovial biopsy of a metacarpophalangeal joint disclosed non-specific synovitis without lymphomatous cell infiltration. A computed tomographic scan of the abdomen and chest showed several anterior mediastinal, pre-tracheal, coeliac, portal, mesenteric, paracolic, hepatic hilar, renal hilar, and retroperitoneal lymph nodes greater than 1·5-2 cm and hepatosplenomegaly. Results of a technetium-99m bone scan were normal. Bilateral iliac crest bone marrow biopsy specimens did not show malignant infiltration.

The patient was treated with six series chemotherapy according to the IMVP-16 regimen (ifosfamide 1 g/m² for five days, methotrexate 30 mg/m² for two days, and etoposide 100 mg/m² for three days over a period of 21 days). The oedema and synovitis resolved after two cycles of this protocol. Two years after treatment was stopped she remains in complete haematological remission and has no signs or symptoms of rheumatic disease. Although uncommon, polyarthritis is well recognised in lymphoma. The interest of this case lies in the associated presenting osteoarticular tentative diagnosis of 'RS3PE' syndrome. In 1985 McCarty et al described eight elderly men and two elderly women who presented with symmetrical polynovisitis of acute onset, affecting most of their appendicular joints and flexor digitorum tendons with pitting oedema of the dorsum of both hands and both feet. Rheumatoid factors were absent from serum samples in all, and no radiologically evident erosions developed. They believed that this disease represented a distinct subset of 'seronegative rheumatoid arthritis', with a predictable course to complete remission.

In our patient the first signs and symptoms of non-Hodgkin's lymphoma resembled this syndrome. Little symptomatic improvement...
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