Chronic diarrhoea associated with *Septata intestinalis*

Sir,

*Septata intestinalis* is a recently described microsporidium which has been implicated in causing chronic diarrhoea and/or disseminated infections in AIDS patients. Unlike infection with *Enterocytozoon bieneusi*, the other common microsporidium isolated from stools of AIDS patients with chronic diarrhoea, infection with *S intestinalis* responds to treatment with albendazole. To our knowledge this is the first case report of the parasite from the UK.

A 28-year-old man presented with a history of chronic diarrhoea over a period of four months. Initially he passed two stools per day increasing to seven or eight times per day. The stools were watery with no blood or mucus. Prior to admission he began to spike fever and complained of loss of weight from 10 st to 8 st. The patient spent 18 months in Tokyo and then visited Bornéo for a short while before returning to the UK six months ago. Whilst abroad he was in good health. On examination he looked thin, dehydrated and febrile and, except for an enlarged right supraclavicular lymph node, there were no other clinical findings. Ultrasound study of the abdomen was normal but the chest X-ray revealed a right supraclavicular lymph node, right paratracheal lymph node and bilateral hilar lymph node enlargement. The right supraclavicular lymph node was aspirated and showed auramine-positive bacilli. The patient denied any risk factors for HIV.

Repeat stool samples were negative for routine culture of bacteria. A routine study of stools for parasites was also negative and therefore stools were sent to the London School of Hygiene and Tropical Medicine for further studies. Diagnosis was first made from unfixed mucoid faeces, which was examined for ova, cysts and parasites (OCP) by formol ether concentration, for crypto-sporidium and *cyclospora* using the phenol survival and modified Ziehl Neelsen methods and for microsporidia by the Kokoskin strong trichrome method. No OCP or coccidians were detected in the sample, but very scanty microsporidium spores were found. A further sample taken 14 days later was also negative for OCP and coccidians, but contained a larger number of spores, which morphologically were consistent with those of *S intestinalis*. As this organism is known to disseminate to other sites in the body, especially the urinary tract, urine samples were obtained from the patient and stained for spores; none were found.

The presence of *S intestinalis* in the stool and the auramine-positive bacilli from lymph node aspirate indicated that the patient was immunocompromised. He was therefore advised to have an HIV test which was found to be positive. His CD4 count was 0.06 x 10^9/l and CD8 count was 0.81 x 10^9/l, with significant absolute T helper cell lymphopenia.

The patient's diarrhoea was treated with oral albendazole 400 mg bid for 28 days and septrin 400 mg daily for a week's treatment. The incidental finding of microsporidal spores in this patient underlines the need for laboratories to examine all faecal samples from patients with chronic diarrhoea for spores, irrespective of known or unknown immunological status. Also, where *S intestinalis* is the infecting organism, treatment with albendazole should be given early to prevent possible dissemination to other sites in the body.

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**Septata intestinalis**
- associated with chronic diarrhoea/dissemination in immunocompromised patients
- responds to treatment with albendazole

**Causes of low CSF glucose and high CSF neutrophil count**
- infection: bacterial meningitis, fungal meningitis
- other unusual causes: brain abscess, CMV polyradiculomyelitis in AIDS, amoebic meningitis, chemical meningitis, connective tissue disorders, vasculitis

**Learning points**
- sarcoidosis may present as a transient ischaemic attack
- meningitis with high CSF neutrophil count should not rule out sarcoidosis

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**Transient ischaemic attack, infectious meningitis, or neurosarcoidosis?**

Sir,

We report the case of a patient with neurosarcoidosis who presented with unusual clinical features and cerebrospinal fluid (CSF) alterations.

**Case report**
A 24-year-old man was admitted for evaluation of a transient episode of aphasia. A few months prior to admission, recurrent early morning nausea developed. He also experienced a transient right facial anesthesia, and an episode of laryngitis that subsided after a short period of oral corticoid treatment.

The patient's general status was excellent. Neurologic examination was normal. Physical examination revealed Perthes-Jüngling oesteitis, and maculopapular lesions of the skin exhibiting sarcoid granuloma on biopsy. Electroencephalography showed slow waves over the left temporal area. Brain computed tomography (CT) disclosed slight ventricular enlargement and a small lacunar infarction in the left internal capsular area. Magnetic resonance imaging (MRI) of the brain revealed severe leptomeningitis (multiple small nodular hyperintense lesions on T2-weighted images, enhanced by gadolinium). In the right capsulohalamic area, hyperintense lesions on the T2-weighted images were suggestive of an ischaemic process.

CSF, as determined on two different days, contained 85 leukocytes/mm³, with 42% polymorphs and 44% lymphocytes. Cytologic study disclosed numerous altered polymorphs but no carcinomatous cells. CSF glucose level was 10 mg/dl (blood glucose level drawn simultaneously was 90 mg/dl) and protein level was 1780 mg/dl.

An extensive search for an infectious process proved negative. Chest X-ray revealed slight hilar adenopathy, and bronchoalveolar lavage showed marked lymphocytosis.

The patient was treated with prednisone (1 mg/kg daily). During the initial period of treatment, this was combined with antituberculous chemotherapy. One year later, the patient is doing well. His neurologic status has remained normal, the morning nausea has subsided, CSF has returned to normal, and the brain MRI no longer shows leptomeningitis. Tolerance of treatment is good.

**Comment**
In this patient, neurosarcoidosis was diagnosed on the basis of skin biopsy, Perthes-Jüngling oesteitis, chest X-ray, bronchoalveolar lavage, neurologic studies, and meningitis without evidence of neoplastic or infectious disease. The patient's clinical presentation was compatible with transient ischaemic attacks. Such cases have rarely been reported in neurosarcoidosis¹ and must be distinguished from cases involving seizures or the paroxysmal cardiac arrhythmies associated with sarcoidosis. They might be due to granulomatous arteries.
Prevalence of diabetes in elderly patients with pacemakers

Sir,

Smith et al, have discussed coronary heart disease, valvular heart disease, bradycardia and heart failure in the elderly patient.1 In one study, 82% of pacemaker implants were in patients aged over 65 years.2 Indications include syncope associated with complete heart block or sinus arrest, symptomatic sick sinus syndrome and symptomatic incomplete atrioventricular block. More debatable is the choice of pacemaker.3

Diabetes is a major risk factor for the development of coronary heart disease.4 Diabetics have increased rates of heart block following a myocardial infarction5 and right bundle branch block is more common in the diabetic outpatient population.6 We have assessed whether diabetics aged over 65 are more likely to need permanent cardiac pacemaker insertion. Patients who had undergone permanent pacemaker insertion were identified using hospital activity analysis data and ward admission books and case notes. Data for the reference population was obtained from a previous survey.7 A total of 942 patients were identified, of whom 11.07% were diabetic. In our control group 8.25% were diabetic. This gave a relative risk of 1.34 (p < 0.01, 95% confidence interval 1.25-1.44).

This result is an underestimate of the true relative risk for two reasons: the hospital activity analysis coding for diabetes is not 100% complete and so patients with diabetes were missed. Also, the non-diabetic group undergoing pacing are an unscreened group and it would be expected that some of them will be undiagnosed diabetics. It has been shown that the prevalence of elderly undiagnosed diabetics in the community is 3.3%.8 Though the aetiology of this excess risk is uncertain, although it has been suggested that there is a microangiopathic effect,9 It has also been shown in experimental diabetic animals that there is increased cholinergic sensitivity10 and this may have an effect on cardiac conduction. The aetiology is likely to be multifactorial and more research is needed to establish the relative contributions of these factors.

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Summary/learning points

- 8-11% of patients undergoing permanent pacemaker insertion may be diabetic

Glucose-6-phosphate dehydrogenase deficiency

Sir,

We read the recent excellent review of glucose-6-phosphate dehydrogenase (G-6-PD) deficiency by Mehta1 with great interest. Based on experience in Israel, we do not, however, concur with his statement that 'Kernicterus has been described in all population groups'. While G-6-PD deficiency is prevalent among some subsets of Sephardic Jews, neonatal jaundice associated with the condition in this population is milder than that observed in some other countries. In the early 1960s, before the advent of phototherapy, and at the same point in time as reports of kernicterus emanated from Greece, Szeinberg et al2 were unable to document any cases of kernicterus attributable to this condition in an Israeli high-risk population. Two subsequent studies3,4 demonstrated a high incidence of neonatal jaundice in G-6-PD-deficient neonates, but with a low rate of kernicterus. Nevertheless, kernicterus cases were encountered in either of these studies. The overwhelming majority of our cases respond to phototherapy, which we commence when serum bilirubin levels exceed 250 μmol/l.

Clearly, in different population groups, environmental or genetic factors appear to interact with G-6-PD deficiency to either dampen or exacerbate the jaundice. Sephardic Jewish G-6-PD deficient neonates appear to be at an advantage in this respect, over their counterparts in other ethnic groups.

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Gallstone ileus: an old role for abdominal 'hand' scanning

Sir,

I was surprised that the 69-year-old patient reported by Seal and colleagues1 spent 14 days undergoing investigations before eventual surgery for gallstone ileus, and was in hospital for all of 10 weeks. Her extensive investigation included abdominal ultrasonography, double contrast barium enema, proctoscopy and isotope bone scintigraphy before an abdominal computer tomography (CT) scan yielded the correct diagnosis. Although this makes an interesting case report, it illustrates how excessive reliance on investigations may sometimes fail to advance the diagnosis, incur needless costs, prolong hospital stay and delay definitive treatment. The diagnosis could have been made earlier by the timely application of the 'hand' scan.

Features of small bowel obstruction associated with a palpable mass in the right iliac fossa in an elderly patient with anaemia and weight loss is sufficient indication for laparotomy as soon as the patient is deemed fit for surgery. Further investigation is unlikely.
Transient ischaemic attack, infectious meningitis, or neurosarcoidosis?

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