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Schistosomiasis

Schistosomiasis, also known as bilharziasis, is thought to affect some 200 million people in 73 countries throughout the world (Jordan and Webb 1982). It is strange therefore that so common a disease, with such widespread effects on the systems of the body, should have been so rarely reported as a cause of musculoskeletal lesions. In this issue (p. 602) Fachartz, Kumar and Hilou describe a case of probable schistosomal infection of the hip but their search of the literature failed to discover a similar case.

The three most common species of trematode are Schistosoma haematobium, S. mansoni and S. japonicum; all have man as their definitive host but each has a different freshwater snail as its intermediate host. S. haematobium is confined to Africa and the Near and Middle East; S. mansoni is found in Africa, Saudi Arabia, the Yemen, South America and the Caribbean; and S. japonicum is found only in the Far East.

The adult schistosome worms, both male and female, live in human mesenteric, portal and vesical veins, and their life cycle consists of alternate generations each in its own host. The miracidium hatches from the egg and invades the freshwater snail from which the cercariae are released and invade the human host. They penetrate...
the skin, where they may cause cercarial dermatitis, then enter a vein via the lymphatic system and eventually reach the liver where they mature. A heavy infection at this stage can cause an acute febrile reaction with hyperesinophilia lasting several days or weeks (Katayama fever). The trematode egg is the main cause of the pathological changes; its antigen leads to the formation of granulomata which consist of epithelioid, plasma and giant cells surrounded by loose fibrous tissue. These granulomata occur in the wall of the bladder, where they often calcify (S. haematobium), or in the large bowel (S. mansoni, S. japonicum). The ova of all three species of schistosome have been found in the brain and in the spinal cord where lesions may result both from infarction of the arterioles and from granuloma formation (Haribhai et al 1991).

Hypertrophic osteoarthropathy has also been described in cases of severe schistosomal bowel disease. The patients usually present with mucosaemiaorrhagic diarrhoea and arthritis in several large joints. Periosteal inflammation may cause new bone formation which is visible on radiographs. Clubbing of the digits is also a feature but the pulmonary symptoms and radiological signs seen in other forms of hypertrophic osteoarthropathy are absent. All these changes are reversible on treatment of the underlying schistosomal infection.

Other granulomatous infections such as tuberculosis and sarcoid are well known to affect the bones and joints, and schistosomal infection was suspected as being the cause of arthritis in two previous reports. Girges (1966) described 36 patients in whom joint pains disappeared after completion of a course of treatment with a schistosomicide (Asitaban). May et al (1973) reported two cases of articular disease occurring in urinary schistosomiasis. In one patient joint biopsy revealed only non-specific synovitis; in both patients the arthropathy improved dramatically after schistosomicide treatment.

In neither of these reports were schistosomes demonstrated in the synovium. In 1982, however, at the Annual Meeting of the South African Arthritis and Rheumatism Association Naidoo and Hean (personal communication) described a 12-year-old boy who had presented with bilateral painful stiff hips. A synovial biopsy performed on the left hip showed non-specific synovitis, but the patient was readmitted a month later with a discharging sinus of the right hip. On this occasion cultures grew Staphylococcus aureus and the synovium was found to show a foreign-body-type giant-cell reaction around several schistosomal ova. There was also schistosomal involvement of the genitourinary and gastrointestinal tracts. One month later a large abscess in the right iliac fossa was drained, and this was also found to be due to a schistosomal infection. After three months of schistosomicide treatment surgical biopsies from both hips revealed no parasites while a biopsy of the rectal mucosa showed S. haematobium ova which were non-viable and calcified.

With a disease as common as this, it is strange that there should have been apparently only two proven cases of joint involvement. Both were in the hip, perhaps because of its proximity to the infected pelvic organs. Both patients were found on second culture to have a staphylococcal infection and this raises the question as to whether it was superimposed upon a schistosomal infection or whether the schistosomes were no more than a coincidental finding.

Whatever their significance, these reports confirm the importance of doing a synovial biopsy whenever open drainage of an infected joint is needed, just as it is advisable to perform biopsy when draining spinal or other bone infections. These lessons have already been learnt in developing countries, but with the increase in intercontinental travel and the migration of populations, the distribution of diseases is changing and it is no longer safe to omit biopsy in these circumstances in any country of the world. Biopsy may bring to light surprising and sometimes vital information. The converse is also true, that when biopsy is performed for suspected neoplasms it is wise to culture for tuberculous and fungal infections as well as carrying out routine microscopy, culture and sensitivity.

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REFERENCES