Hydatid arthritis of the hip joint with fatal outcome

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A 33-year-old male patient presented with grade 4 left hip pain. He walked with a cane, with restriction of motion in all planes. He gave a history of treatment for tuberculosis (TB), with no symptom resolution. He had no constitutional symptoms and no other joint involvement.

Clinical examination revealed severe hip pain, leg length discrepancy of 2 cm, a fixed flexion contracture of 30° with a flexion range of 30° - 80°. Blood results showed a normal full blood count, erythrocyte sedimentation rate of 2 mm/hr and abnormal liver enzymes (creatinite kinase 1 155 IU/l). A Casoni test was negative.

Radiological examination showed central dislocation of the left hip with erosion of the ischium and acetabulum (Fig.1). Computerised tomography (CT) scan (Fig. 2) was very helpful in defining the extent of bone destruction and soft-tissue involvement. Bone scintigraphy suggested an inflammatory process or avascular necrosis.

Diagnosis of hydatid disease was confirmed by histological examination. The patient was put on 3 cycles of medical treatment, which included albendazole and praziquantel. Surgical treatment was discussed with the patient but he declined. Despite medical treatment his condition deteriorated and hyatid cysts and serosanguinous fluid started draining through the open biopsy site. Cultures showed multiple Gram-negative bacilli. He developed multiple sinuses and succumbed to septicaemia a few weeks later.

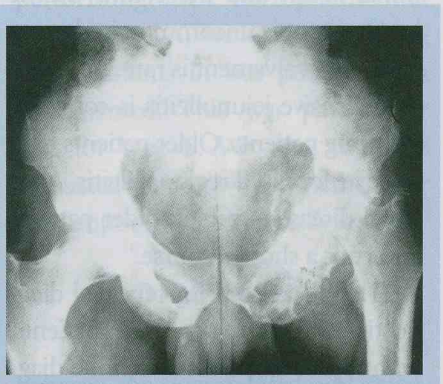

Fig. 1. X-ray showing central dislocation of the left hip with erosion of the ischium and acetabulum.

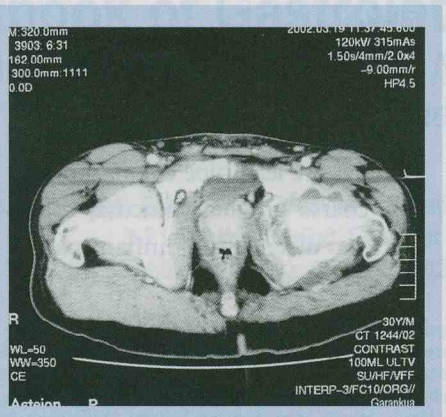

Fig. 2. CT scan of the hip showing extent of bone destruction and soft-tissue involvement.

Discussion

Hydatid disease of the bone is rare, comprising 1 - 2.5% of total hydatidosis, and that of the joint is even more rare. The disease is caused by the cestode *Echinococcus granulosus.* Ingestion of infested meat leads to new tapeworms whose scolices are bloodborne and settle in bone to form cysts causing compression, ischaemia and osteoclast proliferation. This leads to bone destruction (Fig. 3). Hydratid disease of the bone is commonly seen in the spine, pelvis, femur and ribs.

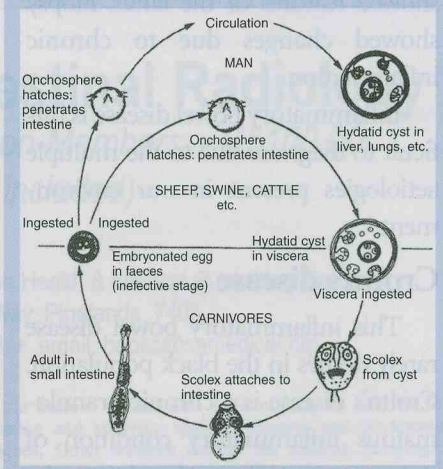

Fig. 3. Life cycle of Echinococcus granulosus.

Differential diagnosis includes TB, chondrosarcoma, aneurysmal bone cyst and metastases. Diagnosis is often difficult without a high index of suspicion and a confirmatory histological test is always needed. Needle biopsy should be avoided for fear of rupturing and spreading the disease along the needle tract.

Radiological examination often shows a multilocular osteolysis with reactive sclerosis of honeycomb

appearance. At times bone fragments in the soft tissue may be seen and pathological fractures may occur. CT scans are helpful in planning surgery especially in less accessible sites.

The Casoni test is commonly positive in soft-tissue hydatidosis; however it has a low positivity in bone involvement. Eosinophilia may also be present, unlike in our case.

In our patient there was severe joint destruction more that bone disease. It is very difficult to determine acurately where the initial focus of infection was. Although early X-rays were not available it appears very likely that the disease might have started very close to or from inside the joint, spreading to the surroundings areas of bone.

Medical treatment has not been very successful. It entails use of the antihelminthic drug mebendazole; however albendazole 400 mg QID is better absorbed. Combination with praziquantel 50 mg/kg daily enhances afficacy. The drug regimen has to be given in repeated courses of 4 weeks for at least six cycles. Liver enzyme monitoring is essential during therapy.

Surgical treatment is the preferred method and resection without spillage is ideal. Scolicidal agents such as hypertonic saline and formalin have been used but their efficacy is suspect, and could be dangerous (formalin), as they do not kill the microscopic daughter cysts. The downside of surgery is that there is often a need for more than one procedure, with chronic sinuses and bacterial superinfection.

Desensitisation with hydatid antigen, hydantoin, has been used with variable results.

A high index of suspicion is necessary in diagnosing hydatid disease of the bone. Diagnosis becomes even more difficult if it affects the joints. Treatment may be very lengthy and difficult. In accessible sites the mainstay of treatment is wide surgical resection. Medical treatment is worthwhile and should be offered pre and postoperatively, and clinical response and liver enzymes will guide the duration thereof.

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