"Hydatid Disease of Femur -A Rare Case Report"

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Abstract: *A 65 year old female patient presented with the complaint of gradually increasing pain and swelling over her left thigh, fourteen years back. Plain skiagram revealed a cystic lesion and a pathological fracture over the junction of upper one third and distal two third of left femur. Patient was planned for surgical resection and biopsy suspecting tumour pathology. Curettage was done and the cystic mass was found to be of hydatid cyst, which was later confirmed with histopathology study. The fracture site was fixed with an implant (K-Nail). Full function of the left lower limb was restored. After a follow-up of fourteen years, the patient presented with an alarming discharging sinus over the greater trochanteric area, the implant was removed and the histopathology study and MRI revealed the absence of any recurrence of the hydatid cyst.*

Keywords: *Hydatid cyst, Pathological fracture, K-Nail.*

INTRODUCTION

Human hydatid disease is caused by the Echinococcus. Genus Echinococcus has four different species including E.vogeli, E.granulosus and E.multicularis. Among these Echinococcus granulosus is the most common cause of hydatid disease in humans. Hydatid disease is endemic in many parts of the world especially in the cattle raising countries. Humans act as accidental host affected by the definitive host(domestic dogs, fox) and intermediate host (sheeps). Liver (55- 70%) is the most common site of hydatid cyst followed by the lungs (18-35%), the involvement of bone is very very rare accounting for only less than < 1 %(Alldred and Nisbet, 1964) exhibiting as a cystic or lytic lesion in the trabecular bone that extend into other subcortical areas[1,2,3,4].

CASE REPORT

Female patient presented with complaints of gradually increasing pain and swelling over her left thigh for a period of two months in the year 1995. Clinically the swelling was tender with variable consistency on palpation, seen over the upper third of the left femur. The skin over the swelling was normal with no sinus. X-rays were done and it revealed a multicystic lesion at the junction of upper1/3 and distal 2/3rd of the left femur with a pathological fracture over the site. All the hematological investigations were normal. The patient was assured and planned for surgical excisional biopsy of the multicystic mass suspecting a tumour pathology. Peri-operatively typical brood capsules like cysts came out under pressure from the bones giving the appearance of Hydatid cysts. The multicystic lesion with typical brood capsules were found within the femur extending into the perisoteum and soft tissue which was later confirmed to be hydatid cyst on histopathology study. Thorough curettage was done over the medullary cavity at the lesion site and was washed with hypertonic saline for a period of 20 min. In order to achieve stabilization, the fracture site was fixed with a K-Nail intramedullary implant. The patient was treated with three cycles of tablet albendazole at a dose of 400mg twice daily for four weeks as systemic solicidal agent. It was a great success that the fracture site united at regular time preserving her normal function of left femur to the full range. The patient was under regular follow-up. After a gap of 14 years, on April 2007 the patient presented to us with an alarming sinus (serous discharge) over the greater trochanter. Suspecting recurrence she was taken up for surgery. Peri-operatively her K-Nail was removed. The lesion site was carefully inspected, curettage was done and the material was sent for histopathology study. To our relief both the histopathology study and MRI post-operatively confirmed the absence of any recurrence of the hydatid cyst. Patient recovered completely with antibiotics, analgesics and she is back to her day to day activities as earlier.

DISCUSSION

Hydatid disease is caused by the parasitic tapeworm *Echinococcus*. The species most responsible for hydatid disease is *Echinococcus granulosus*, endemic especially in cattle raising countries. Humans are the accidental intermediate dead end host. Liver (55-70%) is the commonest site followed by lungs(18-35%),bone involvement is rare accounting for only < 1 %. They have been reported in long bones like femur, tibia, pelvis, fibula and also in spine, rarely in skull. The disease in the bone and joint begins once the blood borne scolex settles there. Bony lesions may lie dormant for 10-20 years. It is a very slow process and therefore, bone cyst are seldom discovered in childhood, even though infestation probably occurs at this time[1,2].
Hydatid cyst begins in the metaphysis giving rise to a multilocular cyst causing scalloping of cortex but with little expansion, sclerosis or periosteal reaction. Growth of the cyst in bone differs from other tissues, polycystic type occurs because the cyst is unable to expand and fragments causing diffuse spreading of daughter cyst and scolices along the bone canals owing to bone rigidity. The cyst results in pressure absorption of the bone, with resultant thinning and extension into the periosteum and soft tissues occurs. Articular surfaces are never breached. If cortex is eroded and the soft tissues are involved, calcification occurs in latter which is typical of the lesion[4,5,6].
The osseous hydatidosis may mimic tuberculosis, chronic osteomyelitis, simple bone cyst, sub-acute arthritis, giant cell tumors, osteosarcoma, malignant fibrous histiocytoma, myeloma and

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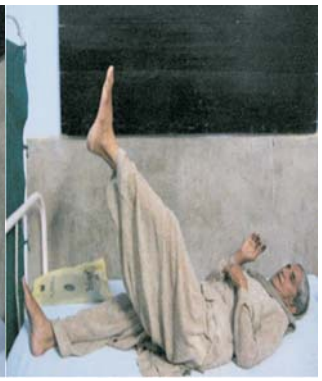
Preoperative x-ray.

Follow-up Xray showing k nail & fracture union

MRI..showing edematous flid within the marrow after k-nail removal

Pic. showing sinus with pt presented after

Pic showing pt squatting post-operatively after k nail removal



hip @ flexion

chondrosarcoma. Plain Skiagram, CT, MRI remain the common modes of diagnostic tools. Radiologically the presence of periosteal reaction, osteocondensation, calcification, and clear delimitation of the lesions allows elimination of the diagnosis of osseous hydatidosis. Computed tomography (CT) is still the best method for diagnosis and post-operative follow-up of osseous hydatidosis. On CT, skeletal cystic hydatidosis appears as one or several closely related, well-defined, osteolytic lesions. There may be bone expansion, cortical thinning, cortical destruction, sclerosis, honeycomb appearance, and extension into adjacent soft tissues. MRI gives good idea regarding the recurrences and soft tissue involvement[7,8,9].

USG helps in determining the extension of the ossifluent abscess by

on sitiing posture

on standing posture

homogenous cystic views corresponding to it. Despite previous reports of spillage of cystic fluid leading to anaphylactic shock or dissemination of disease, fine needle aspiration biopsy (FNAC) has recently been used rather safely in many cases of hydatid disease for diagnostic and therapeutic purposes. Immunological test like casoni test is of less significance in early detection of the disease. However, despite all diagnostic measures, it is sometimes impossible to arrive at a definitive preoperative diagnosis thus, the diagnosis often is established only at surgery or biopsy of the lesions[7,8,9].

Most authors stated that bony hydatidosis should be considered as a locally malignant tumor and the treatment remains wide surgical excision. Peri-operatively the lesion site should be thoroughly curetted, it can be washed with hypertonic saline(20%), absolute alcohol, formalin(10%), silver nitrate (0.5%), povidine iodine (10%). After curettage or excision in such cases, the dead space formed can be filled with bone graft, bone cement or prosthesis in order to achieve stability over the fracture site and prevent secondary infection. Bone graft can be taken from the iliac crest or fibula. Albendazole seems to be the most effective drug as systemic solicidal agent. Albendazole is continued for three weeks with oral dose of 400mg twice daily and the fourth week is drug free. The treatment should be continued for a period of at least 3 months[5,6,9].

We were fortunate enough to achieve excellent result despite the high risk site of involvement and late presentation. However the aim of our study is to increase the awareness about the occurrence of osseous hydatid cyst and its treatment in every case should be individualised according to the site, extent and severity of involvement.

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