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Cystic Hydatid Disease - A Rare Cause of Pathological Fracture

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INTRODUCTION

We describe a case of pathological fracture of Femur at lesser trochanter level secondary to soft tissue hydatid cysts of muscles of the thigh. The fracture was managed successfully by decompression and removal of all the cysts, curettage and fixation with dynamic condylar screw and augmented by bone cement. Postoperatively patient was fully ambulant with partial weight bearing. Though the cystic hydatid disease of bone is commonly seen as a rare cause of pathological fractures but, it is rarest to see soft tissue cysts encroaching upon bone and causing pathological fracture.

Cystic hydatid disease is a zoonotic disorder in sheep farmers caused by the larval form of a cestode, Echinococcus commonly known as the Dog Tapeworm[1,2]. Dogs are the definite hosts while cattle and sheep are the intermediate hosts. Man is the terminal host of the disease infected accidently by orofaecal contamination or by taking food contaminated with eggs. Liver and lungs constitute, the most commonly affected organs amongst the most frequently affected soft tissues.

Bones are affected in 2% of the cases with predominant involvement of spongy bones (vertebrae)[3,4].

CASE REPORT

A 65 years old male, an ex-farmer from the rural area of Punjab, was admitted through accident and emergency with presenting complaints of swelling left thigh in proximal portion for the last 3 years. Swelling was progressive with no associated symptoms such as fever, annorexia, weight loss or any discharge. Swelling was painless till a day before presentation and he developed complaints of pain and inability to bear weight on left hip. No evidence of other injury was present. Patient had multiple consultations and medications from local practioners. His systemic review was non-revaling except history of urgency and frequency of urine for the last 1 year.

In past history he had a slip and fall on left hip area managed by local bone setter some 6 years back.

Examination

General physical examination revealed healthy, conscious old man of average weight and height.

- There was no lymphadenopathy.
- There was no evidence of weight loss
- His musculoskeletal examination disclosed a 15x15cm, soft, firm, and non tender swelling around the proximal left femur. Overlying skin was intact, shiny with prominent veins. There was no gross fluctuation. Local temperature was normal. Range of movement was restricted due to pain. Rest of the systemic examination was inconclusive. His PR revealed mild prostatic enlargement with no nodularity.

Investigations

His roentgenogram of left hip showed a fracture at subtrochanteric level with a radiolucent area extending into the diaphysis. There was medial cortical violation. There was no perilesional sclerosis, no peri-osteal reaction, no cortical widening. Surrounding soft tissue shadow was hazy. There was also a healed pertroch fracture in left femur. Keeping in mind the age of the patient and radiological findings, following differentials were made.

1. Secondaries from prostate, kidney, thyroid.
2. Lymphoma.
3. Solitary myeloma.
4. Desmoplastic fibroma.
5. Malignant fibrous hisiocytoma.
6. Brown's tumours.
7. Enchondroma.

Regarding the duration of symptoms some benign condition seemed most likely.

Other investigations

- There was an eosinophilia of 15%.
- His LFT's RFT's, ESR TLC all were within normal limits.
- His bone scan showed increased uptake and ruled out any skip lesions.
- USG abdomen did not show any visceral mass except moderate prostatic hypertrophy. His FNA-C & trucut biopsy was non specific and did not show any malignant cells. An open biopsy was advised by the histopathology department. So we planned surgical intervention. Through a lateral approach the lesion was opened. There were multiple cysts of various sizes containing serous fluid, found in the plane deep to the deep fascia all around the proximal femur. There was no pus. Specimen (including cysts + bone wall) were taken. Clinical impression was cystic hydatid disease. Whole of the surgical wound was irrigated with hypertonic saline. Fracture was reduced and fixed with dynamic condylar screw, augmented with bone cement to fill the gap, to give support and to kill local residual pathology by its exogenous heat. Postoperative recovery was uneventful. Stitches were removed on 10th postoperative day. Partial weight bearing ambulation and Tab. Albendazol 15mg/kg was started for 4 weeks. His histopathology report was highly suggestive of hydatid cystic disease with characteristic laminated membrane, but no scolices were seen. So an indirect haemagglutination test was performed which was strongly +ve for echinococaus at a titre of 2048, thus confirming the diagnosis. His 02 months follow up is excellent with full weight bearing. Plan is to have follow up for 02 years regarding local or distant recurrence.

DISCUSSION

Cystic hydatid disease involves the skeleton in 2% and muscles in 5% of cases[4,5,6]. Moreover the bone lesions are almost always primary by haematogenous mode of spread. It commonly involves the spongiosa of the bone with predominant involvement of vertebrae and pelvis in >40% of cases of bone lesions. Long bones are affected less commonly. But it is very rare to see a pathological fracture of a long bone secondary to soft-tissue cysts encroachment[3].

In our patient, keeping in mind the age of the patient, some secondaries seemed more likely to be the cause. But, regarding the duration and slow progression of symptoms, one should keep in mind this Cystic Hydatid Disease as the rare cause of pathological fracture especially in sheep farmers of our country. The only remarkable thing is that the fracture was not due to primary osseous cyst but was due to secondary encroachment of the soft tissue cysts in muscle which is rare to see.

Regarding the radiological features, the lesion is characterized by osteolysis, cortical violation affecting diaphyseometaphysal junction in long bones. There is cortical thinning, with no cortical widening. No perilesional sclerosis or periosteal reaction. All these features (also present in our case) help in ruling out other cystic or lytic lesions[3,4].

Regarding investigation indirect haemagglitration serology and MRI of the local area are the investigations of choice[1-3].

As far as treatment is concerned, surgical intervention with debridement, scolicidal solution irrigation, internal fixation and bone cement augmentation is the recommended treatment with adjuant chemotherapy with Albendazole 15mg/kg for 4 weeks and 2-3 cycles should be repeated with in interval of 2 weeks[7,8].

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