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Case report

Chronic osteomyelitis of ilium presenting as an expansile multiloculated lytic lesion – A case report

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ABSTRACT

Chronic iliac osteomyelitis classically presents radiologically as an ill defined radiolucent lesion with moth eaten appearance along with periosteal reaction and sequestrum formation. Our case report presents a rare radiological picture of iliac bone osteomyelitis in the form of an expansile multiloculated lytic lesion.

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1. Introduction

Chronic osteomyelitis of ilium is a rare entity both in children and adults^{8,17} and radiologically presents usually as a diffuse moth eaten radiolucent lesion with periosteal reaction and sequestrum formation.¹² Rare presentations such as expansile lytic lesion¹⁵ or a multiloculated lesion¹⁴ have been earlier described. All these rarities of presentation into a single case have made this case a diagnostic dilemma and in such cases diagnosis mainly depends on the histopathological findings supported by culture and sensitivity to identify the causative organism.

2. Case report

AB, a 17 years male student presented with pain in left gluteal region and difficulty in walking for the last 2 months, preceded by direct trauma to the gluteal region while playing. There was no history of radiation of pain. Patient also had low grade continuous fever a week prior to getting admitted which subsided on medication. Similar complaints were experienced by the patient 2 years ago following an episode of trauma.

Clinical examination The patient was anaemic with an antalgic gait. A warm tender diffuse erythematous gluteal swelling which crackles on palpation was appreciated. There

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Fig. 1 – AP view.

Fig. 4 – 3D CT view.

Fig. 2 – Coronal CT view.

Fig. 3 – Saggital CT view.

Fig. 5 – Intra op view of lesion.

was shortening of left lower limb by 1.5 cm in the supra-trochanteric region of thigh segment. All the movements of left hip joint were decreased. There was no neurovascular deficit.

Investigations revealed low haemoglobin levels 7.8 mg/dl, normal total & differential leucocytic counts, raised ESR levels 30 mm/1st hr (normal 0–5 mm/1st hr), raised CRP levels 8 mg/dl (normal 0.1–0.5 mg/dl) marginally raised serum alkaline phosphatase 262 IU (normal 50–250 IU), normal serum calcium and phosphate levels, Widal test negative, brucella antigen negative and sickling test negative.

Plain antero-posterior radiographs (Fig. 1) revealed a well defined expansile, multiseptate bony lesion with thinned out cortex in left ilium and evidence of protrusio acetabuli.

Fig. 6 – Low power view of curettings.

CT scan (Figs. 2 and 3) added finer details such as cortical breach and multiple fluid filled cavities to the radiological findings. 3D reconstruction (Fig. 4) showed a mass involving the left ilium overhanging the hip joint.

With a differential working diagnosis of aneurysmal bone cyst, giant cell tumour and fibrous dysplasia tissue diagnosis was attempted.

FNAC revealed non-neoplastic lesion with inflammatory cells. To confirm the diagnosis, an **open biopsy** through an incision of 5 cm along the middle third of the iliac crest was done. On opening an area of 3 cm of cyst wall not much bleeding was seen but multiple seropurulent fluid filled cavities were seen, which on curettage showed underlying granulation tissue adherent to the walls of the cyst (Fig. 5). The entire curettings and the lesion wall of about 3 cm diameter were sent for histopathology. Histopathologically no cyst wall was identified in the entire tissue submitted, inflammatory cells are seen in the trabecular bone suggesting chronic nonspecific osteomyelitis (Figs. 6 and 7). There were no fungal hyphae. AFB staining was negative. Culture of fluid from cyst revealed *Pseudomonas aeruginosa* sensitive to clindamycin,

Fig. 7 – High power view of curettings.

Fig. 8 – Squatting at 18 mts follow-up.

Fig. 9 – Cross leg sitting at 18 mts follow-up.

Fig. 10 – Full wt bearing (front view) at 18 mts follow-up.

Fig. 11 – Full wt bearing (side view) at 18 mts follow-up.

vancomycin and imipramine. Postoperatively, patient was put on clindamycin for 12 weeks and was advised non-weight bearing for 8 weeks.

At 18 month-follow-up, patient was pain free with 1.5 cm shortening and had concentrically decreased range of motion terminally but patient could comfortably squat and sit cross legged (Figs. 8–11). Radiologically there was no progress in size of the lesion nor was there any progress in the state of protrusion acetabuli (Figs. 12 and 13).

3. Discussion

Osteomyelitis is commonly known to occur in metaphyseal region of long bones³ and is usually preceded by an episode of trauma.^{10,13,16} Its presence in flat bones has also been documented^{1,8}. Osteomyelitis of the pelvic bones is uncommon^{2,8,19} and has a reported incidence of 2–11% with the ilium being the most frequent site of involvement among the pelvic bones.¹ *Staphylococcus aureus*, *Pseudomonas aeruginosa*,⁹ *Proteus mirabilis*, *Enterobacter* and *Escherichia coli* have

Fig. 12 – AP view at 18 mts follow-up.

Fig. 13 – Frog leg view at 18 mts follow-up.

been found to be the most common causative organisms.⁴ Though it often presents radiologically as an ill defined radiolucent lesion with moth eaten destruction¹² its presence as a lytic lesion has also been described¹⁵ and multiple cystic lesions¹⁴ have also been documented in long standing cases. In such nonspecific radiological presentations, a useful and reliable tool for diagnosis shall be a histopathological study. Early diagnosis can be achieved by Technetium bone scanning.^{5,18,19} Because of the excellent blood supply to the pelvis treatment options include antibiotic therapy alone or curettage of the lesion along with antibiotic therapy for as long as 6–12 weeks.^{6,11} An enbloc excision as far distally as the anteroinferior iliac spine and as far posteriorly as the sacroiliac joint if necessary has also been described depending on the site and size of the lesion.^{7,16}

In conclusion, our case was a diagnostic dilemma and one among the few documented cases of osteomyelitis showing nonspecific radiological picture. Atypical radiological presentations have been described for various lesions. For common disease like chronic osteomyelitis the chances of atypical presentations shall also be more. Absence of classical radiological findings with supportive history, clinical and haematological findings should not exclude the possibility. One should go a step forward and do an open biopsy to give the pathologist enough material for histopathological study in addition to identification of causative organism and thus help us in arriving at the right diagnosis as observed in our case. In few sites such as the ilium, antibiotics alone for 6–12 weeks may be sufficient to cure the disease.

Conflicts of interest

No benefits in any form have been received or will be received from a commercial party related directly or indirectly to the subject of this article.

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