

## Sclerotic changes on plain X-ray led to early diagnosis and successful treatment of primary lymphoma of iliac bone

Sir,

A previously healthy 54-year-old woman presented to our hospital with a 3-month history of pelvic pain. There was no history of constitutional symptoms such as unintentional weight loss, fever, and loss of appetite. Clinical examination revealed pain on deep palpation of the right iliac region. There was no evidence of soft tissue swelling or redness in the site of patient's pain. The rest of physical exam was unremarkable. Laboratory investigations were within normal limits (erythrocytes sedimentation rate of 20 mm in the 1<sup>st</sup> h, negative C-reactive protein and white blood count of 4800 per  $\mu$ l).

A plain radiograph of the pelvis showed slightly lytic-sclerotic changes of right iliac bone with indistinct margins, which at a shallow observation confused with bowel gases [Figure 1]. A computed tomography (CT) was performed and showed a slightly expansile lytic-sclerotic lesion with small soft tissue component in the right iliac bone [Figure 2]. The bone scan also revealed isolated uptake of technetium-99m in the right ilium [Figure 3]. According to the patient age, the differential diagnosis included metastasis, lymphoma, plasmacytoma, and chronic osteomyelitis.

The core needle biopsy result was consistent with the diagnosis of diffuse large B-cell nonHodgkin's lymphoma. There was not any other site of involvement on CT scan of the chest, abdomen, and pelvis. Positron emission tomography (PET) also showed no secondary absorption of fluorodeoxyglucose [Figure 4]. The diagnosis of primary nonHodgkin lymphoma of bone was made, and the patient was successfully treated with a combination of chemotherapy and radiotherapy.

NonHodgkin's lymphoma of bone is a rare entity which is limited to the long bones and axial skeleton, with the femur being the most common site of involvement. Primary involvement of iliac bone is extremely rare. There are no clinical or radiological characteristics which be diagnostic for primary bone lymphoma. The image findings in radiograph or CT scan are variable and nonspecific, range from near normal to diffuse



Figure 1: Radiograph of pelvis demonstrates lytic-sclerotic changes of right iliac bone

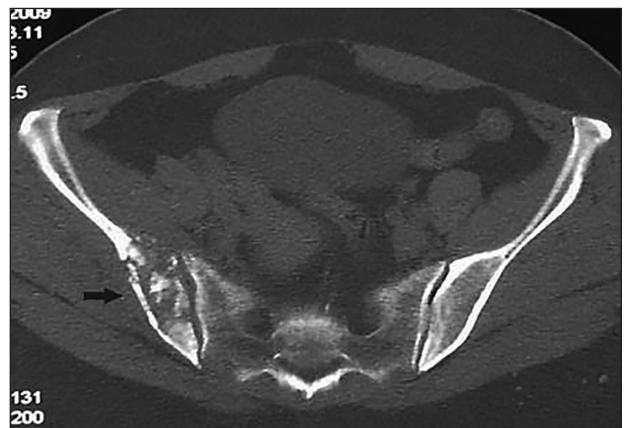


Figure 2: Pelvic computed tomography image shows a slightly expansile lytic-sclerotic lesion in the right iliac bone with no extension to the sacroiliac joint

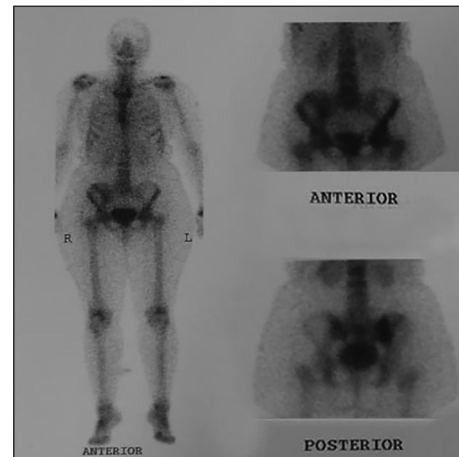
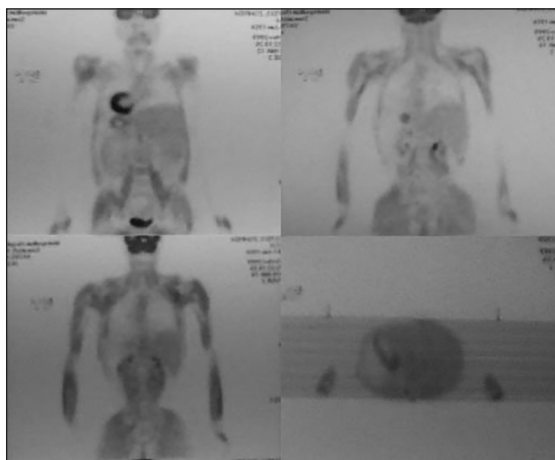


Figure 3: Bone scan revealed isolated uptake of technetium-99 m in the right ilium

permeative pattern.<sup>[1-6]</sup> A review article performed by Mulligan *et al.*, revealed that the most common features on imaging studies are lytic (70%), including permeative or moth-eaten pattern, and mixed lytic and sclerotic density (28%). Periosteal reaction and soft tissue mass



**Figure 4:** Positron emission tomography scan showed no secondary absorption of fluorodeoxyglucose

were reported in 58%, and 80-100% of cases, respectively, in this study.<sup>[2]</sup>

Sequestrum formation considered as a radiological feature which may help to differentiate between plasmablastic lymphoma (PBL) and other conditions such as metastasis and myeloma. Sequestrum formation has been reported in 11-16% of PBL cases.<sup>[7]</sup>

Cross-sectional imaging studies are useful adjuncts to conventional radiography. Extensive involvement of bone marrow cavity with a surrounding soft tissue component and without extensive cortical destruction is a pattern, which is reported only in PBL, Ewing sarcoma, and myeloma.<sup>[8]</sup>

The key educational message of our case is that any change on plain X-ray is valuable and should not be overlooked. This case also reminds us the importance of considering primary nonHodgkin lymphoma as a valuable differential diagnosis in lytic and sclerotic lesions of iliac bone.

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#### Conflicts of interest

There are no conflicts of interest.

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