

Giant-cell tumor of the pubic bone: A case report.

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Citation

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Abstract

Giant-cell tumour (GCT) of the bone is a benign, locally aggressive lesion that commonly occurs in the ends of the long bones. Involvement of flat bones of the pelvis, especially the pubic bone is extremely rare. We herein describe the unusual presentation of the GCT of the left pubic bone in a 30-year-old gentleman, which was diagnosed by fine needle aspiration cytology (FNAC). In a difficult site not amenable to biopsy, FNAC may prove to be a quick, easy and cost effective measure for correct preoperative diagnosis.

INTRODUCTION

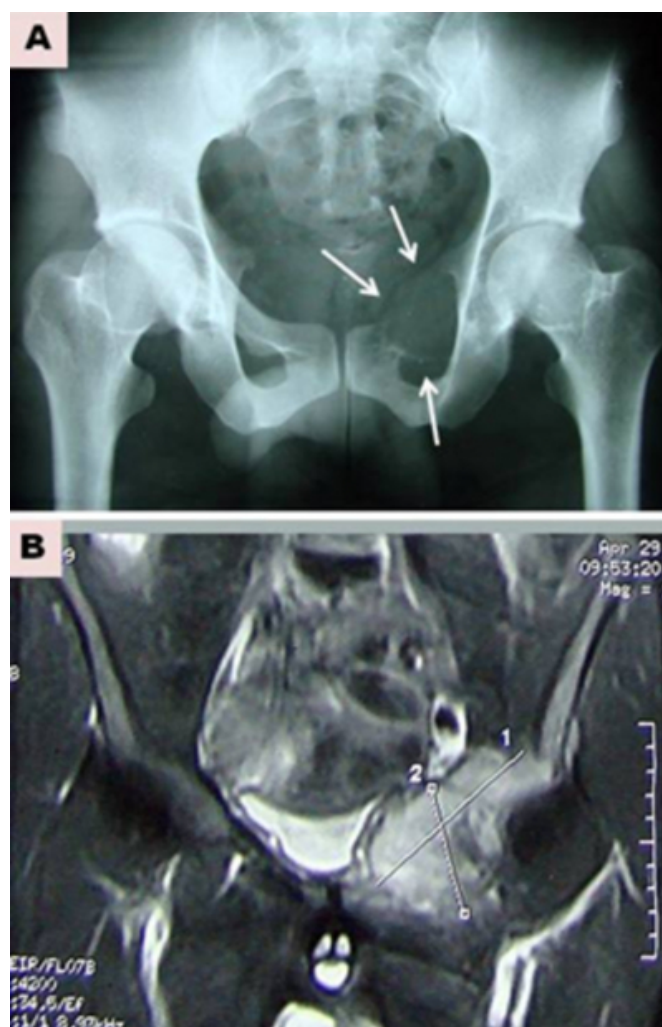
Giant-cell tumour (GCT) of the bone is a benign, locally aggressive tumour that typically affects the ends of long bones, most commonly involving distal femur, proximal tibia, distal radius and proximal humerus in order of frequency.¹ Involvement of the pelvis, especially the pubic bone, is extremely rare.^{2,3} We herein report the fine needle aspiration cytology (FNAC) diagnosis of GCT of the pubic bone in a 30-year-old male patient and discuss its rarity and unusual presentation.

CASE HISTORY

A 30-year-old gentleman presented with complaints of pain in anterior aspect of the left hip since last 6 months. There was no history of previous trauma or fever. On examination, a tender ill-defined edematous area was palpated deeper down in the left inguinal region of the patient. Inguinal lymph nodes were not palpable. Systemic examination of the patient was unremarkable. His skiagram of the pelvis revealed a well-defined lytic lesion in the left superior pubic ramus (Fig. 1A). His routine laboratory investigations were within the normal limits. The serum calcium was 9.4 mg/dl, serum phosphorus was 3.8 mg/dL and alkaline phosphatase was 441 IU/L (Normal: 108-300 IU/L). An X-ray of the chest, skull and lumbar spine was unremarkable. An MRI of the pelvis was done, which showed a lobulated expansile mass of soft tissue intensity measuring 8.5X5.5X6 cm involving the left superior pubic ramus (Fig. 1B).

Figure 1

Figure 1:

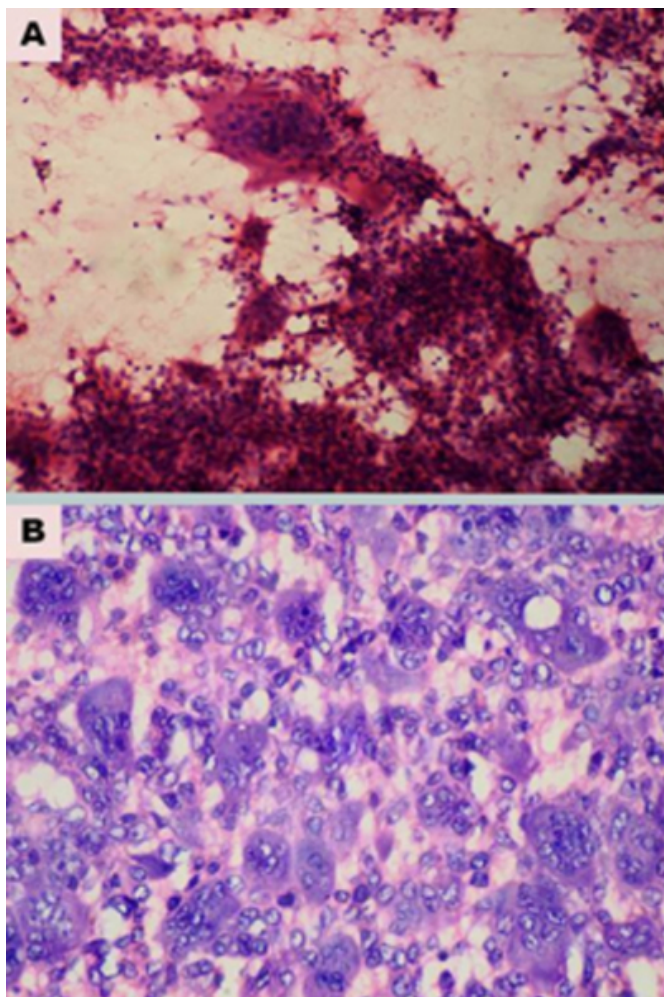


Fine needle aspiration cytology (FNAC) of the lesion

showed cellular smears consists of numerous osteoclastic giant cells attached to clusters of mononuclear stromal cells (Fig. 2A) in a haemorrhagic background. The morphologic appearances of the nuclei of giant cells and those of stromal cells were identical. The stromal cells did not show cytological evidences of nuclear pleomorphism or increase mitotic activity. The lesion was treated with curettage and histopathological examination was done, which confirmed the findings of FNAC (Fig. 2B). The final diagnosis based on clinical, radiological and pathological findings was GCT of the left pubic bone. Postoperative course of the patient was uneventful and he did not receive adjuvant radiotherapy.

Figure 2

Figure 2: .



DISCUSSION

GCT involving the pelvic bone is quite uncommon and accounts for around 5% of GCT of the bone.^{2,3} In the pelvic bone, GCT occurs most commonly in the ilium while the pubis and the ischium are involved less frequently. Sanjay et al² have found 19 patients with GCT of the pelvic bone, of

which pubic bone was affected in only three patients. Similarly, in another study³ of five patients with GCT of the pelvic bone, involvement of the pubis was present in a single case. Both of these studies were done over a period of three to four decades, thus highlighting rarity of the lesion. GCT of the pelvic bone mostly occurs in third or fourth decades of life with a clear female predilection.² Most patients present with symptom of pain. Average size of the tumour in this location is larger than 9.5 cm.² Radiologically, it presents as a pure lytic lesion without peripheral sclerosis or periosteal reaction.

FNAC diagnosis of the ischium has recently been described.⁴ Cytologically, GCT usually demonstrates abundant material with cohesive as well as dispersed cell clusters. A double cell population consist of mononuclear spindle (stromal) cells and giant cells of osteoclastic type that are attached to the periphery of the clustered spindle cells.⁵ The giant cells are usually large and have over twenty or thirty nuclei, most of them arranged towards the centre. By contrast, the mononuclear stromal cells are the only proliferating element in the lesion and the one exhibiting atypia in the rare cytological malignant examples of this tumour.¹

The diagnosis of GCT of the pelvic bone is often delayed and challenging. This occurs due to deep location of the lesion and clinical presentation of pain which may be confused with that of a low back pain or muscle strain.² The MRI findings in this case suggested the possibilities of (i) fibro-osseous benign masses e.g., focal fibrous dysplasia, non ossifying fibroma, chondromyxoid fibroma; (ii) plasmacytoma and (iii) a rare possibility of a metastasis. The cytologic differential diagnosis included giant-cell containing lesions such as aneurysmal bone cyst, metaphyseal fibrous defect, non-ossifying fibroma, osteoblastoma and GCT of hyperparathyroidism. One of the main microscopic differences between true GCT and these so called variants resides in the spatial relationship between giant-cells and stromal cells. The giant-cells tends to be distributed regularly and uniformly in GCT, whereas in the lesions that simulate it, foci containing numerous, clumped giant-cells alternate with large areas completely lacking this component.⁶

The natural history of GCT is that of a low grade malignancy with a propensity for metastasis. Curettage with or without resection is the treatment of choice of GCT involving the pelvic bones.² However, pulmonary metastasis has been described in one out of nineteen patients with GCT

of the pelvic bones.² In short, the diagnosis of GCT of a deeply located unusual site such as the pubic bone by FNAC is a quick, easy and cost effective technique when correlated clinically and radiographically, keeping in mind the differential diagnosis of giant-cell containing lesions.

References

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