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Case Report

Giant Cell Tumour of Talus: A Rare Case Report

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Abstract: Giant cell tumour (GCT) of talus bone is a rare entity. We report a case of giant cell tumour of a body of a talus in 20 years male patient. The patient presented with pain, swelling and mild tenderness on deep pressure on right ankle since last 3 months with an osteolytic lesion seen in the talus on radiographs Final niddle aspiration cytology was suggestive of GCT. Intralesional curettage, followed by electro-cauterization and autologous bone grafting was performed as a single procedure following which patient's pain and swelling disappeared. Patient was followed up for four and half years. There was no recurrence. The complete range of movements at the ankle and the sub-talar joints were regained. We report our attempt to eradicate an aggressive giant cell tumour with electro cauterization. Currently we are unaware of any reports in the literature addressing curettage followed by electrocauterization and bone grafting for giant cell tumour of talus. Patients consent was taken for case report submission for publication.
Keywords: Autograft, bone neoplasm, foot diseases, giant cell tumor of bone, talus

INTRODUCTION

Giant cell tumour (GCT) is commonly seen in the distal femur, proximal tibia, distal radius and proximal humerus in descending order of frequency [1]. GCT is uncommon in the small bones of hands and feet. Very few cases of GCT tauls are reported [2]. GCT is generally found in skeletally mature patients in third decade of life. GCT of small bones of the hand and feet occur in the slightly younger age group with higher incidence of multicentricity [3].

Histopathology report shows osteoclasts like multinucleated giant cells. There is no correlation between histological appearance and biological behavior [3].

GCT is known for local recurrence. It is important to eradicate an aggressive giant cell tumour. Classically the treatment of choice is intralesional curettage and bone grafting.

CASE REPORT

A 20 yrs old male presented with pain and swelling over the anterolateral aspect of the right ankle joint, present since last three months with no significant history of trauma. Patient had a mild tenderness on the anterolateral aspect of the right ankle on deep pressure. The swelling was diffuse and bony hard in consistency. There were no restrictions of movements of the ankle and the subtalar joint. Patient had an antalgic gait and symptoms aggrevated on walking on uneven ground.

Radiograph of the ankle joint revealed an osteolytic lesion in the body of the talus which showed ballooning of cortex which had thinned out but was intact (Fig. 1 & 2). The margins of the ankle joint and the subtalar joint appeared normal. CT scan revealed an expansile hypodense lesion in the talus (Fig. 3). The haemogram was within normal limits.

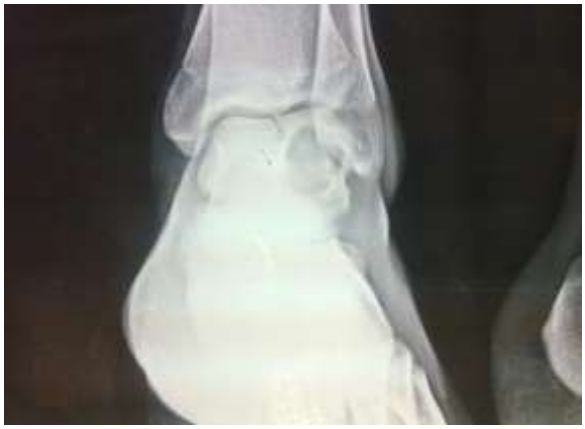

Fig. 1: Radiograph ankle joint oblique view

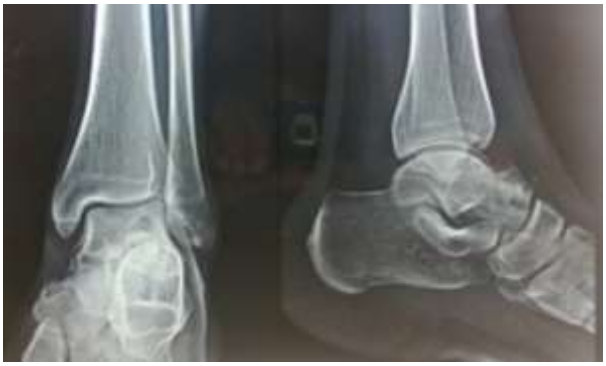

Fig. 2: Radiograph ankle joint antero-posterior and lateral view

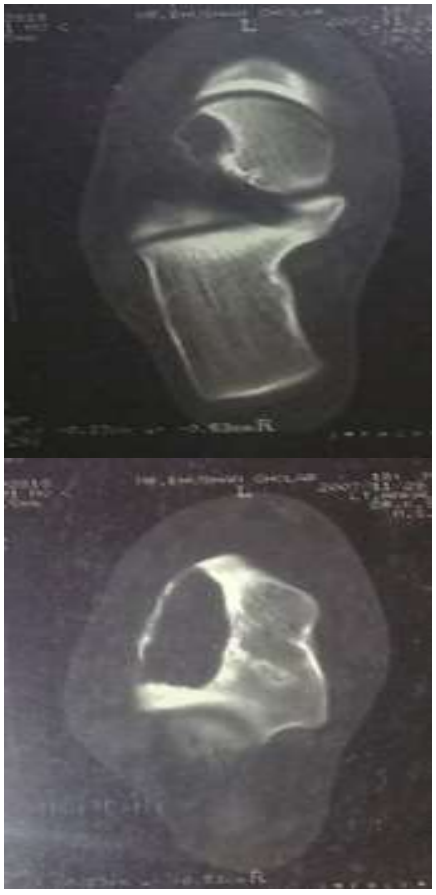

Fig. 3: CT scan talus

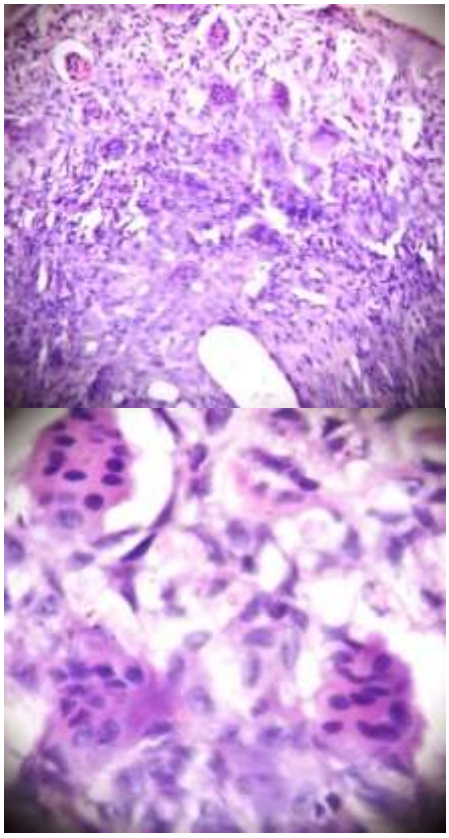

Fig. 4: Histopathology slide of tumor excised (10x H&E, 40x H&E)

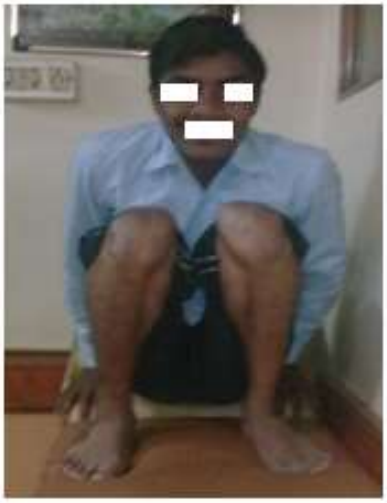

Fig. 5: Postoperated clinical photograph of patient

Fig. 6: Postoperated clinical photograph of patient

Intralesional curettage followed by thorough electro cauterization from inside the curetted cavity was repeated three times followed by autologous bone grafting. The graft was taken from iliac creast of the same side.Intra-operatively there was no involvement of the articular cartilage or evidence of any pathological fracture.

Histopathology report showed osteoclast like multinucleated giant cells in a predominantly vascularised network of proliferating round oval and spindle shaped stromal cells (Fig. 4). It was diagnosed as a giant cell tumour.

A protective below knee cast was applied for a period of three months. Weight bearing was started with supportive cast over next three months. There were no restriction of movements at the ankle and the subtalar joints (Fig. 5 & 6). Patient was followed for two and half years. There was no evidence of recurrenceof the tumour.

DISCUSSION

Giant cell tumor is a benign but locally aggressive neoplasm with a high tendency of local recurrence. The tumor generally occurs in long bones in skeletally mature individuals with the peak incidence in the third decade of life. Giant cell tumour of small bones of hands and feet is very rare. If presents in a slightly earlier age group and demonstrates a higher incidence of multicentricity than those in other locations [4].

Clinically GCT of the talus bone presets as ankle sprain or sinus tarsi syndrome with or without the history of trivial trauma.

In long tubular bones radiological differential diagnosis include aneurismal bone cyst, non-ossifying fibroma and chondroblastoma. When GCT occurs in long bones, the conventional radiographs demonstrate a lytic lesioncentered in the epiphysis but involves the metaphysis and extending at least in a part to the adjacent articulacr cortex. The tumour usually bulges beyond the confines of the cortex which undergoes varying degree of resorption. Apart from a thin shell of periosteal new bone outlining the outer surface of tumour, no periosteal reaction is appreciated unless a fracture is present. However the radiographic features of giant cell tumour at sites other than long bones are nonspecific and they are not unlike other osteolytic processes [5].

The traditional treatment of giant cell tumour of bone is intralesional excision, curettage and autologous bone grafting. Intralesional excision however leaves microscopic disease in the bone regardless of how carefully and thoroughly performed. The reported incidence of local recurrence with this technique is as high as 40-60% [5].

We categorized the treatment modalities into

- Curettage with bone grafting
- Curettage, cryotherapy using liquid nitrogen and bone grafting.
- Curettage, use of chemical agent like phenol, chlorpactin and bone grafting.
- Radiotherapy
- Curettage and packing bone tumour bed with methylmetacrylate
- Curettage followed by electro cauterization and bone grafting.
- Excision of tumourandtibio-calcaneal fusion.
- Talectomy and forming pseudo joint between tlbia and calcaneum.

Despite a high recurrence rate very good outcomes can be achieved with the use of adjuvant like electo cauterization and allograft for the management of giant cell tumour [6].

Great efforts to extend the curettage and excision by chemicals such as phenol or cytotoxic agents like chlorpactin applied on tumour bed may reduce the rate of local recurrence [7].

Cryosurgery using liquid nitrogen to extend curettage has high incidence of local wound and bone complications.

Methylmatacrylate for packing the tumour bed decreases relapse by generating neoplastic tissue. But subchondral placement of cement may induce degeneration of articular cartilage [8]. It may also produce local chemical cytotoxic effect.

As the tumour is more aggressive, we preferred curettage followed by electro cauterization and bone grafting as a single procedure. Electro cauterization necrosis the remaining neoplasm to maximum extent thus minimizing the morbidity and autologous bone grafting reduces the loss of function. Better results can be achieved with the use of electro cautery as an adjuvant to curettage and bone grafting forgiant cell tumour of a talus.Most recurrences of giant cell tumour can be expected with two years but same patients remain at risk for as much as thirty years after curettage and bone grafting.

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