

# Giant Cell Tumor of Talus: A case report of late presentation with extensive involvement

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*Giant cell tumor (GCT) of bone, or osteoclastoma, is classically described as a locally invasive tumor that occurs close to the joint of a mature bone. It is generally considered to be a benign tumor. In our rural setup, a substantial proportion of patients seek traditional means of treatment before medical consultation. A case of GCT in a 20 year-old boy which had led to extensive destruction of the talus is reported. In view of the extensive involvement, total talectomy along with tibio – calcaneal arthrodesis was performed. At 6 months of follow-up, the patient had a painless and well arthrodesed ankle. There was no evidence of recurrence at 18 months of follow-up.*

**Key words:** GCT, osteoclastoma of the talus ,tibio calcaneal ,arthrodesis.

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In the talus, giant cell tumor (GCT) of bone is an infrequent primary bone tumor that can presents late with extensive involvement of soft tissue and articular surface changes often making the joint preservation difficult or impossible.<sup>1</sup> GCT account for approximately 5-8% of all primary bone tumors.<sup>2,3,4</sup> The authors report a GCT which had led to destruction of the entire talus in a 20 year-old boy. In view of the extensive involvement, total talectomy along with tibio calcaneal arthrodesis was performed with the aim of achieving a stiff but painless joint.

## Case presentation

A 20 year-old boy presented with chief complaints of insidious onset pain in the left ankle since the last two years, swelling in the left ankle since the last six months and inability to bear weight on right side since the last six months. The patient was treated elsewhere with intralesional steroid. There was no history of fever, loss of appetite, loss of weight, similar complaints in other joints or history of similar complaints in the past. The family, occupational, recreational and drug histories were not significant. The general physical and systemic examinations were within normal limits. On local examination, the attitude of the limb was neutral. There was a 5 × 4 cm swelling over medial and anterior aspect of left ankle joint. (Fig. 1)

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**Figure 1** Clinical photo of the left ankle.



**Figure 2** Radiograph showing the lesion (left ankle).

There were no visible veins, sinus or discharge from the swelling. There was hypopigmentation and the swelling was tender. All movements at the ankle joint were painfully restricted. Serum biochemistry studies were within normal limits. Anterior posterior (AP) and lateral radiographs of the ankle showed a radiolucent lesion occupying the whole talus. (Fig. 2) The magnetic resonance scan (MRI) revealed an expansible soft tissue mass in the talus causing cortical destruction and extension into soft tissues. (Fig. 3) A fine needle aspiration of the mass was performed and a provisional diagnosis of GCT was rendered.



**Figure 3** Preoperative MRI showing GCT extensive involvement of the left ankle.

The condition, its prognosis and various treatment modalities were discussed with the patient and his family. Because of extensive involvement of talus, total talectomy with tibiocalcaneal arthrodesis was planned. The patient was a manual labourer and therefore opted for a stiff but painless joint. Total talectomy was performed through an anterolateral approach. (Fig. 4) Fusion was achieved by autologous iliac crest graft and stabilization with a Steinmann pin and Chamley's clamp. (Fig. 5) The patient was advised non weight bearing on the affected limb for 8 weeks and mobilized in a short leg walking cast thereafter.

At 6 months of follow-up (Fig. 6), the patient had a smooth healed scar with a painless and well arthrodesed ankle and no evidence of recurrence. He had shortening of 2 cms which he managed with a shoe rise. There was no evidence of recurrence at 18 months of follow-up.



**Figure 4** Intraoperative image showing the lesion.



**Figure 5** Immediate post-operative radiograph showing complete talectomy and pan talar fusion using external fixator.

## Discussion

GCT, also known as osteoclastoma, is a fairly common bone tumor accounting for 5% of all the primary bone tumors. It is a benign tumor with a tendency for local aggressiveness and high chances of recurrence. GCT is most commonly seen in the distal femur proximal tibia, distal radius and the proximal humerus in descending order of frequency.<sup>5</sup>



**Figure 6** Clinical photo 6 months after surgery.

The foot is an unusual site of presentation and GCTs involving hand and foot bones appear to occur in a younger age group and tend to be multicentric.<sup>6</sup> The clinical picture is that of insidious onset pain, which in many cases may be mismanaged as ankle sprain. A history of preceding trivial trauma may be present. Other features are non specific. Radiologically; the tumor appears as an eccentric lytic lesion with cortical thinning and expansion. There is absence of reactive new bone formation. The tumor may erode the cortex and invade the joint. Pathological fracture may also be seen.<sup>7</sup> MRI scanning permits accurate delineation of the tumor extent and helps in deciding the line of management i.e. (curettage versus talectomy).

Many authors have reported satisfactory results with intralesional curettage and bone grafting.<sup>8</sup> However, curettage alone has a high rate of recurrence and adjuvants like Methylmethacrylate (bone cement), cryotherapy and phenol have been suggested.

Partial or total talectomy may be contemplated in cases where there is extensive involvement of the talus. Arthrodesis may or may not be done, but it is said that arthrodesis is essential after resection of all tarsal bones except calcaneum.<sup>9</sup>

Fresh frozen osteochondral allograft reconstruction has also been described for an aggressive GCT of talus but there is paucity of literature on this particular modality of treatment.<sup>10</sup> The trend is towards limb salvage and amputation is reserved for recurrences and only rarely done. In conclusion, in a case of GCT of talus presenting late with extensive involvement and in a manual labourer, total excision and tibiocalcaneal arthrodesis is a valuable treatment option.

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