# Primary Aneurysmal Bone Cyst of Talus - A Case Report

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**Abstract :**

Aneurysmal bone cyst (ABC) of the talus is an extremely rare lesion; less than 20 cases have been reported in PubMed till 2012. Although benign, it has a locally aggressive behaviour making it difficult from diagnostic and therapeutic point of view. It becomes even more challenging when presented at unusual sites. Here is reported a rare case of primary ABC of talus in a 19 year male treated by curettage and autologous iliac crest bone grafting. The patient has excellent functional outcome within 6 months of follow up.

**Keywords :** Aneurysmal bone cyst, Talus, Curettage

## Introduction :

Aneurysmal bone cyst (ABC) is a benign tumour like condition of bone, which consists of blood filled cystic cavities and is locally destructive. This tumour has a predilection for metaphyseal regions of long bones (Femur-22%: Tibia-17%: Humerus-10%) and from Spine 12% and Pelvis 9%. [1]Its incidence is slightly more among females and in second decade. The cyst usually begins in the cancellous part of the bone and expands slowly eroding the surrounding cortex.

Here is reported an unusual case of primary aneurysmal bone cyst in talus in a young male patient who was treated with curettage and bone grafting.

## Case Report :

A 19 year old male, student, presented in out-patient department of GCS medical college and hospital, Ahmedabad, in November 2014 with complaint of insidious onset intermittent dull aching pain in right ankle since 6 months. He had no other complaints. No history of recent or remote injury. On local examination, no swelling, normal temperature, tenderness on deep palpation on dorsal aspect of ankle, normal but painful range-of-motion. Distal neurovascular status was normal. Anteroposterior (AP) and lateral radiographs of right ankle and CT scan showed a well defined, expansile, lytic lesion in body of talus. No periosteal reaction or calcification. Articular margin was intact.

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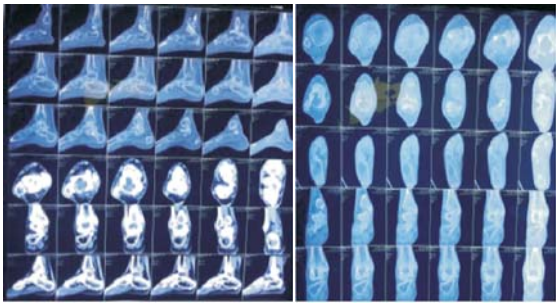
**Figure 1 : AP and lateral x-ray of ankle showing lytic lesion in body of talus**

**Figure 2 : CT Scan of talar lesion**



Our differential diagnosis was aneurysmal bone cyst, giant cell tumor and simple bone cyst. However, we decided to plan the treatment of the lesion along the lines of giant cell tumor. Written and informed consent was taken. The patient was taken up for extended intralesional curettage and autologous iliac crest bone grafting. The talus was exposed by standard antero-lateral approach to the ankle. A small corticalwindow was made over the lateral wall of Talus. The interior of talus revealed spongy, blood filled mass. Thorough curettage was performed and the cavity was enlarged in all directions using a scoop, and packed with autologous

cancellous iliac crest graft. The material was sent for biopsy. Post-operatively, below knee slab support was given. He was advised non-weight bearing for 6 weeks.

Histopathological examination showed multiple blood filled cavities enclosed by fibrous septae without an endothelial lining. Numerous osteoclast giant cells arranged irregularly in clusters, as well as scattered individually were present. There was no cellular atypia. A diagnosis of primary aneurysmal bone cyst was made.

**Figure 3 : Post operative X ray**

**Figure 4 : Follow up X ray after 2 months**

**Figure 5 : Follow up X ray after 6 months**

Figure 5 shows the follow up X ray at 6 month post operatively. The graft has incorporated completely within the talus and there was no evidence of recurrence.

**Figure 6 : Clinical photographs shows good ankle ROM**

**Discussion :**

Aneurysmal Bone Cyst (ABC) has become a common bone tumour in literature since it was first described by Jaffe and Lichtenstein in 1942. [2] It is a benign tumour like condition of bone. Many authors believe it to be a result of local circulatory disturbances and therefore do not consider it as a true neoplasm. [3] The favored site of presentation is the vertebrae, flat bones and metaphysis of long bones. Talus is an unusual site for ABC, in fact, the most common tumours of talus are intra-osseous ganglion cysts. [4]

ABC is associated with distinctive 17p13 translocations that result in up-regulation of USP6, a deubiquitinating enzyme. [5]

ABCs that arise de-novo are termed as 'primary' whereas those occurring in conjunction with another tumor are termed as 'secondary'. Secondary ABCs may be seen with fibrous dysplasia, osteoblastoma, chondroblastoma, osteosarcoma, chondrosarcoma, metastatic carcinoma, etc.Therefore, a diagnosis of ABC merits a thorough search for any associated pathology, which would decide the line of management. Other differentials include simple bone cyst (SBC) and giant cell tumor (GCT). The presence of blood filled cavities surrounded by proliferating fibroblasts and osteoclast giant cells differentiates ABC from a SBC. Giant cell tumor (GCT) tends to occur in the skeletally mature population and involves the epiphyses of long bones. GCTs have been reported to occur in the talus [6] and can sometimes present with a secondary ABC. [7] It may be very difficult to differentiate talar GCTs from ABCs on imaging studies. However, the presence of mononuclear stromal and regular distribution of giant cells favors the diagnosis of GCT. In addition, the giant cells in GCT tend to be larger

and contain more nuclei. [3] Curettage and bone grafting is the standard treatment for ABCs in long bones. [8] However, talar lesions can be challenging to treat. Many authors have described excellent results with intralesional curettage and bone grafting for lytic lesions that were well localized within the talus. [9, 10, 11] Partial or total talectomy along with tibiocalcaneal arthrodesis has also been described for lesions that show extensive destruction of the talus and soft tissue or subtalar extension. [6, 10] Luna et al[9] have described the use of external fixation in place of a traditional cast after curettage and bone grafting for ABC of talus.

## Conclusion :

The possibility of ABC must not be forgotten when a patient presents with a lytic lesion in talus. Since, it may be difficult to differentiate talar ABCs from GCTs on the basis of imaging studies, it is prudent to follow the principles of treatment of GCT viz. extended intralesional curettage and use of adjuvants in order to minimize recurrences. Even though the histological picture may be diagnostic of an ABC, a meticulous search should be made to rule out the secondary nature of such a lesion. With primary ABCs, an excellent prognosis can be expected after intralesional curettage and bone grafting.

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