

CASE REPORT

A RARE CASE REPORT OF GIANT CELL TUMOR IN THE BODY OF TALUS AND OUR MANAGEMENT

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ABSTRACT

Giant cell tumor is described as neoplasm of undifferentiated mesenchymal stromal cells with presence of abundant, multi-nucleated giant cells. It is generally considered to be a benign tumor. Giant cell tumor rarely involves small bones of hand and foot, and is a rarity in the talus. We report a case of 13 year old female presenting with pain in left ankle since 2 months. X-ray showed a lytic lesion and MRI suggestive of Giant Cell Tumour. Treatment consisted of intralesional Curettage and cavity filled with hydroxyapatite granules. The histopathological features consistent with giant cell tumor. There were no signs of recurrence at 12 months follow up both clinically and radiologically and the patient was able walk with full weight bearing on affected limb without pain.

INTRODUCTION:

Giant cell tumor is a benign neoplasm arising from mesenchymal cells characterised by multinucleated giant cells. The term giant cell tumor was described in 1912 by Bloodgood and it was described as a benign lesion¹. In 1940 Jaffe et al. described it as locally aggressive tumor². But giant cell tumor constitute 5-8% of primary bone tumors and approximately 3% of these are either malignant or metastasize or undergo malignant transformation^{3,4}.

Though giant cell tumor may arise from any bone, involvement of talus is very rare and GCT of small bones are often associated with multicentricity. Giant cell tumors are of profound interest to orthopaedic surgeons, pathologists and radiologist because of its characteristic

histological features, severe bone destruction and controversial treatment options and preponderance of recurrence.

METHODS

A 13 year old female presented with pain in left ankle following a trivial trauma since 2 months, the pain was dull aching in type and was present only on walking initially, but gradually became persistent even at rest. The patient was taken to an osteopath where she was given massage and put on a traditional bandage, but the pain was not relieved.

Examination revealed mild swelling but only tenderness over the talus head. There were no signs of inflammation or infection. Ankle and subtalar joint movements were full range and painless.(Fig.1,2,3)



Figure 1: Clinical photograph of patients left ankle in neutral rotation



Figure 2: Clinical photograph with left ankle in full plantarflexion



Figure 3: Clinical Photograph with left ankle in dorsiflexion

After taking informed consent study was done and the routine blood investigations including cell counts, ESR and C-reactive protein were within normal limits. Plain

radiograph (AP and Lateral View) showed a lytic lesion in the body of talus with no cortical break consistent with campanacci grade I lesion (Fig.4,5).



Figure 4: Lateral view showing lytic lesion in left talus with no cortical break.



Figure 5: AP view showing lytic lesion in left talus with no cortical break

MRI of the ankle revealed a slightly expansile lesion in body of talus with well defined margins extending upto articular margins (Fig.6,7). General body examination and chest Xray was done to rule out metastasis and multicentric disease.

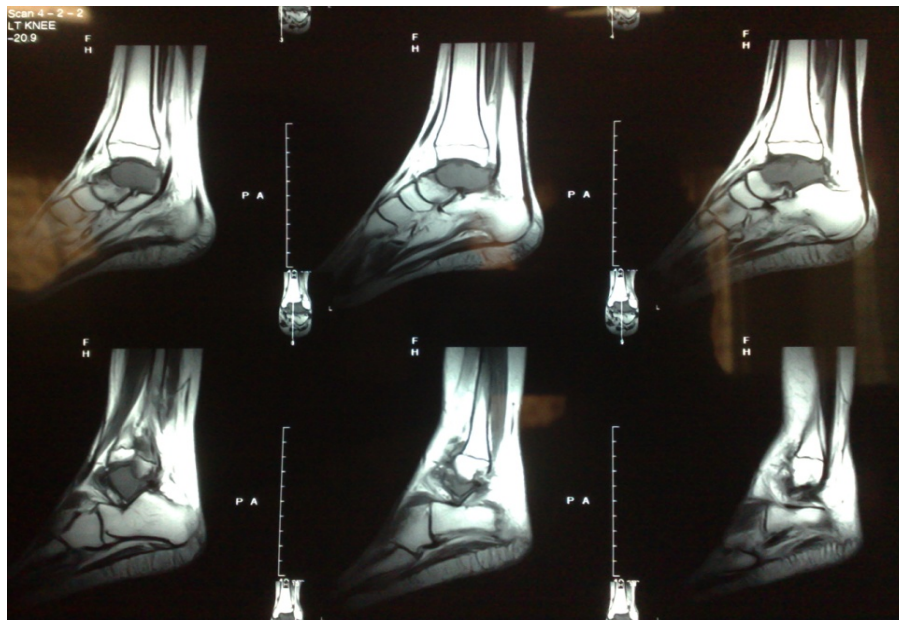


Figure 6: T1 W Sagittal section showing hyperintense foci in the body of talus.

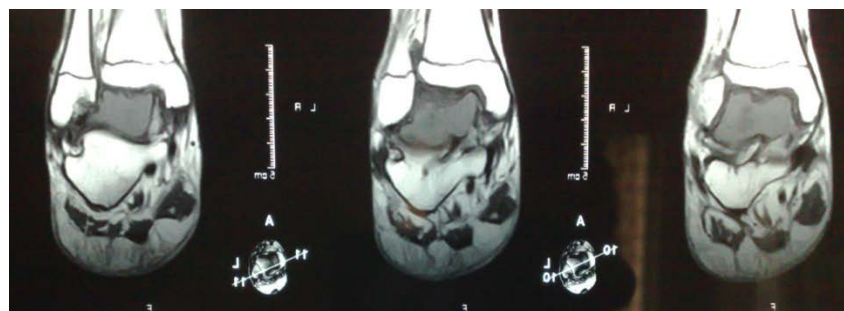


Figure 7: T1 W Coronal Section of left ankle

Since the lesion was localised only to body of talus transverse incision (Fig.8) was made instead of standard antero-lateral along the ankle crease for cosmetic reasons. Cortical window was made on lateral surface curettage was done and grey brown material was retrieved. The bone gap was filled with hydroxyapatite granules.



Figure 8: Operative incision- taken transverse in line with the skin crease of ankle

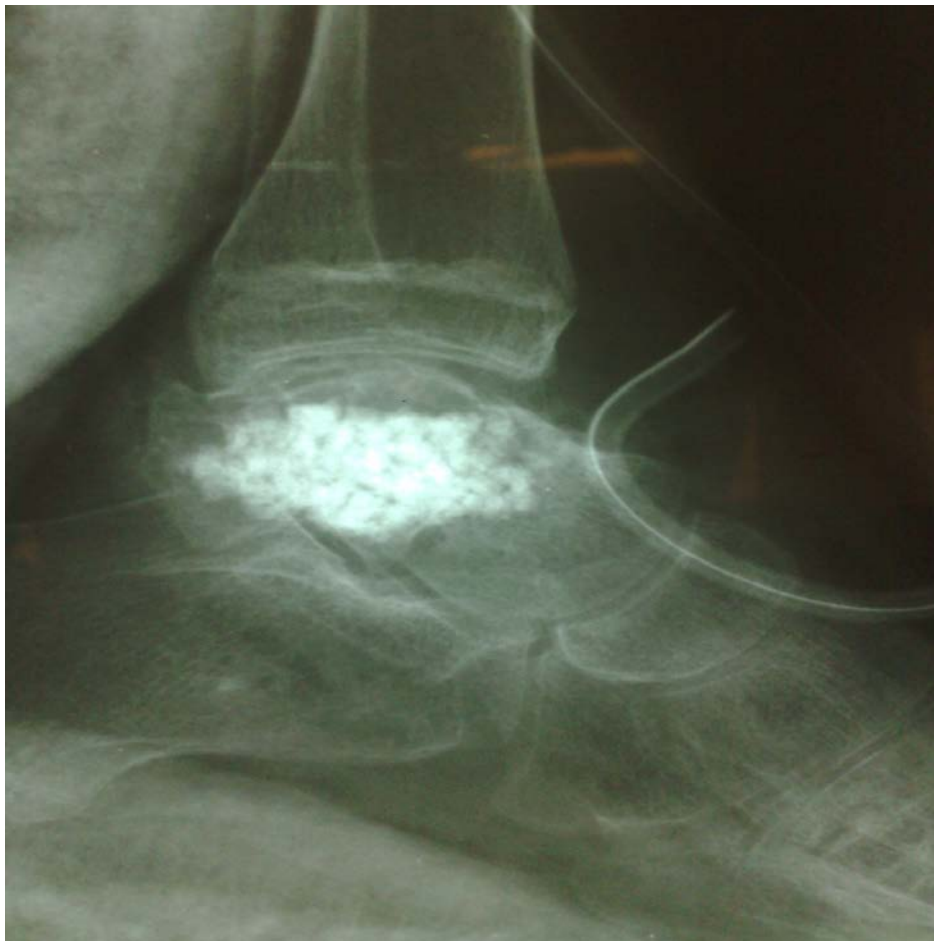


Figure 9:



Figure 10: Xray Picture of left ankle AP and Lateral view- Immediate Post operative Xray showing hydroxyapatite granules in left talus with complete curettage of the lesion.j

The curetted material was sent for histopathological examination (Fig.11) which showed osteoclastic giant cells suggestive of giant cell tumor.

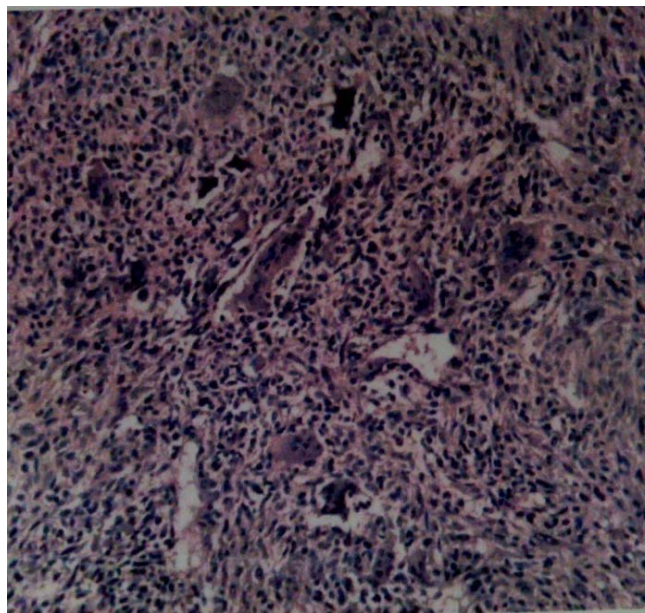


Figure 11: The patient was put on POP slab postoperatively and weight bearing was allowed 2months later. After 2 year follow up there are no signs of recurrence and patient is able to walk with full weight bearing.



Figure 12: Three Months Post-op Xray Lateral view showing hydroxyapatite granules in left talus



Figure 13: Three Months Post-op Xray -AP View of left ankle



Figure 14: Xray Picture of left ankle AP and Lateral view- 1 year Post operative Xray showing hydroxyapatite granules in left talus with complete curettage of the lesion



Figure 15: Complete Range of plantarflexion at 2 years of follow up



Figure 16: Functional Range of dorsiflexion at 2 years of follow up



Figure 17: 2 years follow up Lateral Xray of left ankle showing no signs of recurrence with good incorporation of Hydroxyapatite granules into the host bone.



Figure 18: 2 years follow up Xray of left ankle- AP view showing no signs of recurrence with good incorporation of Hydroxyapatite granules into the host bone.

DISCUSSION:

Giant cell tumor of talus is rare, infact only one case among 218 cases have been found by study performed by Goldenberg, et al⁵. a similar case series of 208 cases done by Sung, et al., reported only one case⁶. Giant cell tumor are locally aggressive hence proper planning and evaluation is required. As the lesions of small bone are associated with multicentric disease a comprehensive assessment is necessary.

The current trend of treatment are intralesional curettage and bone grafting or talectomy and tido-calcaneal arthrodesis⁷.

Many authors have done intralesional curettage and bone grafting showed satisfactory results⁷. However there is a high rate of recurrence by curettage alone. Total talectomy ensures complete elimination of tumor thereby chances of recurrence and metastasis but arthrodesis results in stiffness and functional compromise.

Dhillon et al., studied 12 cases of talar tumors and suggested talectomy⁸. Malwar in his case report suggested talectomy as primary treatment⁹.

Arunangsu Bhattacharyya reported a case where giant cell tumor of talus was treated by curettage and bone grafting, at one year follow up the patient was pain free with full range of ankle movements¹⁰.

In this case we performed intra-lesional curettage as the lesion was confined to the bone without any cortical break. A thorough curettage was done and large window was made and the bone gap was filled with hydroxyapatite granules instead of conventional bone

graft. No adjuvants were used for ablation. After 1 year the patient is walking without pain and functional range of ankle movements are restored.

In a carefully selective cases intra-lesional curettage and grafting with hydroxyapatite granules is a good treatment option instead of bone grafting.

CONCLUSION:

After thorough preoperative assessment, for a Campanacci grade 1 lesion confined to the bone, intra-lesional curettage and hydroxyapatite grafting is a good treatment option with very low rate of recurrence. Although more studies are needed to evaluate this

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