



GIANT CELL TUMOR IN DISTAL FIBULA

Orthopaedics

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ABSTRACT

Giant cell Tumor (GCT) of the distal fibula is an exceptionally rare condition that presents significant challenges in surgical management. Approaches such as wide excision or intralesional curettage, combined with adjuvant chemical cauterization, are critical for minimizing the risk of GCT recurrence. Reconstruction of the resulting bone gap often involves the use of a tricortical iliac crest autograft, secured with supportive plate fixation. In cases of large or locally aggressive lesions, preserving the ankle mortise during wide excision is advisable. In this report, we describe the case of a young female patient with a GCT of the distal fibula. The treatment included en bloc resection, chemical cauterization using phenol, and reconstruction of the distal fibula with a tricortical iliac crest bone graft. This method may prove effective in managing this uncommon lesion, with positive implications for both recurrence rates and functional outcomes.

KEYWORDS

Bone graft, chemical cauterization, fibula cell tumor, reconstruction.

INTRODUCTION

- **Giant cell tumor** - benign but aggressive lesion, commonly arises from epiphysis, common locations distal femur, proximal tibia and distal radius
- **Distal fibula** - very rare site for GCT, with only few descriptions available in literature.

Management options

- **Intralesian curettage** - high recurrence. Adjuvant (phenol, argon beam coagulation etc) use following curettage - low recurrence,
- En-bloc wide resection and reconstruction in aggressive lesions and in cases with cortical breach,
- Irradiation and or embolisation, Denosumab - in inoperable lesions in pelvis or spine, when surgery is contraindicated.

Case

- **History and complains** - 33 yrs old male presented with complain of swelling over Lt distal leg and ankle lateral aspect for one month with occasional mild pain, without any history of preceding trauma/ fever.
- **On examination** - swelling over lateral aspect of Lt distal leg and ankle, no skin discoloration, no engorged veins, in continuity with Lt distal fibula/lateral malleolus, local temp normal, 5 × 3 cm in size, non compressible, non reducible, not adherent to skin, fixed to fibula, mild diffuse tenderness present.
- left ankle ROM - normal
- X Ray - a lytic lesion of Lt distal fibula and lateral malleolus, margins clear with cortical breach, 5×3 cm in size.
- MRI - in addition to xray, the swelling was dark on T1 and bright on T2 weighted images. CT scan - findings as in x ray + a breach in the cortex of the fibula was noticeable.



- Haematological investigations and chest x ray - within normal limits

Biopsy - needle biopsy was taken under image guidance and LA which confirmed it as GCT.

Treatment

Surgery : Under spinal anaesthesia using direct lateral approach to fibula en-bloc excision with safe margins done and reconstructed using ipsilateral proximal fibula which was fixed with a 1/3rd tubular plate and a syndesmotic screw. Initially immobilized by slab then B/K cast after suture removal on post-op day twelve. Drain was removed on post-op day three. Follow up was on monthly basis. Partial wt (toe touch) bearing was allowed after 8 weeks, which was progressively increased to 60-70% over next one month and gradually to full weight bearing in another month. Cast was removed after 4 months post operatively. At 6 months of follow-up patient is able to walk without support.

DISCUSSION -

current method of treatment for benign and mild aggressive GCT is extended curettage followed by adjuvant use like phenol, cautery or argon beam coagulator to kill any remaining tumor cells and for highly aggressive GCT is en-bloc excision.

CONCLUSION -

We found en-bloc resection with reconstruction using ipsilateral proximal fibular graft to be a reasonable salvage option for distal fibular GCT where extended curettage is not feasible.



REFERENCES

1. Sobti A, Agrawal P, Agarwala S, Agarwal M. Giant Cell Tumor of Bone - An Overview. Arch Bone Jt Surg. 2016 Jan;4(1):2-9. [PMC free article] [PubMed]
2. Ghostine B, Sebaaly A, Ghanem I. Multifocal metachronous giant cell tumor: case report and review of the literature. Case Rep Med. 2014;2014:678035. [PMC free article] [PubMed]
3. Werner M. Giant cell tumour of bone: morphological, biological and histogenetical aspects. Int Orthop. 2006 Dec;30(6):484-9. [PMC free article] [PubMed]
4. McCarthy BJ, Shibui S, Kayama T, Miyaoka E, Narita Y, Murakami M, Matsuda A, Matsuda T, Sobue T, Palis BE, Dolecek TA, Kruchko C, Engelhard HH, Villano JL. Primary CNS germ cell tumors in Japan and the United States: an analysis of 4 tumor registries. Neuro Oncol. 2012 Sep;14(9):1194-200. [PMC free article] [PubMed]
5. Chan JY. A clinical overview of centrosome amplification in human cancers. Int J Biol Sci. 2011;7(8):1122-44. [PMC free article] [PubMed]