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A RARE CASE, GCT OF LOWER END OF FIBULA AND ITS MANAGEMENT

KEYWORDS: Giant cell tumour, distal fibula, ankle mortise reconstruction

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ABSTRACT **INTRODUCTION**- Giant cell tumour is one of the most common benign bone tumour found in clinical practice. More then 50% of these cases occurs around knee. Distal radius is next common site. GCT of distal fibula is rare to occur. There are only few case reports in literature. Purpose of reporting this case is to suggest management of such a case. **CASE REPORT**- A 32year old male presented with a slow growing, painless swelling over lateral aspect of left ankle of one and half year duration. Plain radiographs were suggestive of a giant cell tumour with cortical breach, which confirmed on bone biopsy. Surgical en-block resection of tumour done with reconstruction of ankle mortise with ipsilateral proximal fibula.**CONCLUSION**- GCT of distal fibula is extremely rare and pose challenges in management as there are no clear guidelines in literature. We recommend complete excision of this tumour with reconstruction of ankle mortise with proximal fibula ensuring good functional ankle post-operatively.

INTRODUCTION –

GCT is one of the most common bone tumours. Most common site is around knee and distal end radius (1). We are presenting a case report of lower end of fibula GCT and its subsequent management.

GCT of lower end of fibula is a rare entity with incidence of less then 1% in literature (2). The purpose of this case report is to suggest management of such tumour.

CASE REPORT-

A 32year old male, farmer presented to our outpatient department with slow growing swelling over lateral half of left ankle of one and half year duration. He was having pain on walking and his routine activities affected due to pain. No other significant history.

On examination there is large globular swelling over lateral aspect of ankle, measuring 7×4×3cm size, firm to hard in consistency, overlying skin having mild dilated veins (figure 1). Ankle range of motion from 20 degree of plantarflexion to 10 degree of dorsiflexion which was painful through out motion. No distal neurovascular deficit and no palpable lymph nodes. General and Systemic examination was normal.

Plain X-Rays of ankle suggestive of well demarcated, expansile, lytic lesion with classical "soap bubble" appearance and breach of cortex (figure 2). Routine haematological and biochemical examination was normal. Chest Xray was also normal.

J- needle core bone biopsy done and histopathology report confirmed the clinico radiological diagnosis of GCT (figure 3).

Surgical excision of the tumour (figure 4) with reconstruction of the ankle using ipsilateral proximal fibula planned. Under tourniquette control En-block excision of the tumour with adequate margin of lower end of fibula done via lateral incision (figure 5). Measured length of proximal fibula resected extra-periosteally after proper isolation and care of lateral popliteal nerve (figure 6).

The proximal fibula was reversed and fixed to the remaining fibula with semitubular plate and screws. Distal end of fibula fixed to the tibia with 2-syndesmotic screws after proper articular congruity achieved doing minor shaving of approx surfaces without any osteotomy (figure 7).

After removal of tourniquette adequate hemostasis achieved and wound closed in layers. Above knee plaster slab applied, postoperative radiographs taken for documentation (figure 8) and patient discharged from the hospital after first dressing check. Sutures removed at 14day and kept non-weight bearing for 6weeks. Patient advised to use crutches for next 3months and gradually returned to full weight bearing walking after removal of syndesmotic screws.

Surgical specimen sent for histo-pathological reporting suggested findings diagnostic of Giant cell tumor with cortical breach.

At 6months follow up wound has healed (figure 9) and patient is satisfied with no pain
and full weight bearing walking with no evidence of recurrence radiologically (figure 10).

DISCUSSION –

The GCT of lower end of fibula is a rare condition(3). Only few case reports and small case series have been published in literature on this condition hence there are no clear guidelines available for its management and outcomes (4,5).

Giant cell tumour of the bone is locally aggressive lesion, has unpredictable behaviour, not related to radiographic and histo-pathological appearance (6).

Treatment of GCT is the surgical, wether its intralesional extended curettage using chemical adjuvants with filling the void using bone graft or bone cement in case of intact articular surface. Recurrence rate after extended curettage is approximately 10-20% (7).

The reconstruction of lower fourth of fibula is essential after excision of tumour for ankle mortise stability. Ankle reconstruction can be done with proximal fibula (8). Sometimes open wedge osteotomy of the lower end is required to match the articular surface but in our case it was not needed. Histopathology and radiological staging do not correlate with the incidence of recurrence. Our case do not have any recurrence till last follow up.

CONCLUSION – Giant cell tumour of distal fibula is rare entity with involvement of ankle mortise. Recurrence rate is high but after en-block excision of tumour and reconstruction of ankle mortise with ipsilateral proximal fibula, chances of recurrence are diminished and there is good ankle range of motion with stability.

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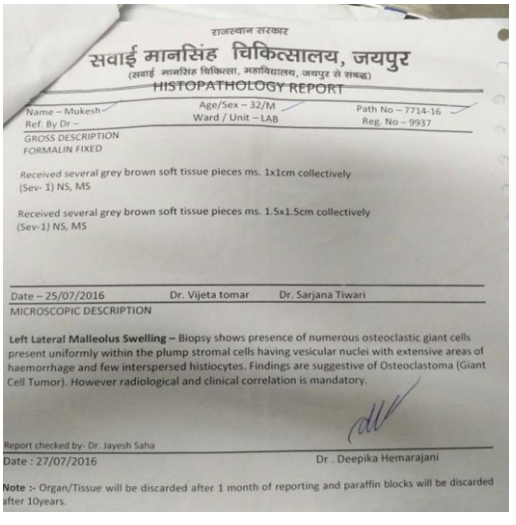
Clinical Message – Giant cell tumour (GCT) is a benign locally aggressive tumour, having high recurrence rate after surgery. Incidence of distal end fibula GCT is rare. In this case report of distal end fibula, we used surgical method of en-block tumour excision and reconstruction of ankle mortise with proximal fibula graft and fixation with plate and screws. We didn't have recurrence and good ankle function post-operatively.

So we recommend this surgical method for distal end fibula GCT management.

figure 1. pre-operative clinical picture.

figure 2. Radiographs suggesting classical lytic, soap bubble appearance



राजस्थान सरकार

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(सवाई मानसिंह चिकित्सा, महाविद्यालय, जयपुर से संबद्ध)

HISTOPATHOLOGY REPORT

Name – Mukesh
Ref. By Dr –
Age/Sex – 32/M
Ward / Unit – LAB
Path No – 7714-16
Reg. No – 9937

GROSS DESCRIPTION
FORMALIN FIXED

Received several grey brown soft tissue pieces ms. 1x1cm collectively
(Sev- 1) NS, MS

Received several grey brown soft tissue pieces ms. 1.5x1.5cm collectively
(Sev-1) NS, MS

Date – 25/07/2016 Dr. Vijeta tomar Dr. Sarjana Tiwari

MICROSCOPIC DESCRIPTION

Left Lateral Malleolus Swelling – Biopsy shows presence of numerous osteoclastic giant cells present uniformly within the plump stromal cells having vesicular nuclei with extensive areas of haemorrhage and few interspersed histiocytes. Findings are suggestive of Osteoclastoma (Giant Cell Tumor). However radiological and clinical correlation is mandatory.

Report checked by- Dr. Jayesh Saha
Date : 27/07/2016
Dr . Deepika Hemarajani

Note :- Organ/Tissue will be discarded after 1 month of reporting and paraffin blocks will be discarded after 10years.

figure 3. J-needle biopsy report confirms GCT

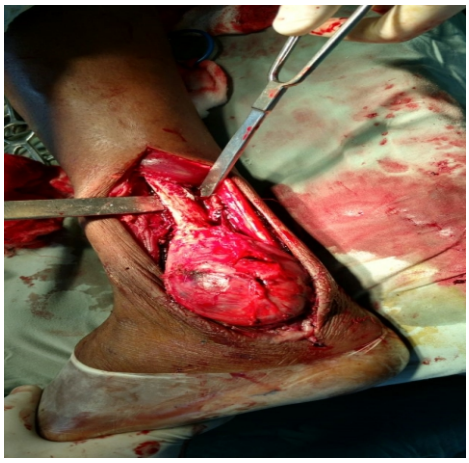

figure 4. intra-operative picture of tumor

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