

## Operative Management of Distal Femur GCT by Sandwich Technique for Joint Salvage: A Case Report and Review of Literature

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**Abstract:** GCT is locally aggressive benign bone tumour located eccentrically in epiphysis. Most common site is distal femur in 20-40 yrs age group with slight female predominance. We report a case of 21 yrs female patient presented with pain and swelling over lateral aspect of right distal femur without any history of significant trauma .X-RAY, MRI, and incisional biopsy done. Patient was managed by Sandwich technique to preserve articular cartilage. Histopathological examination (HPE) of excised mass confirmed the diagnosis. Till last follow-up (1year), patient is symptom free with no evidence of recurrence.

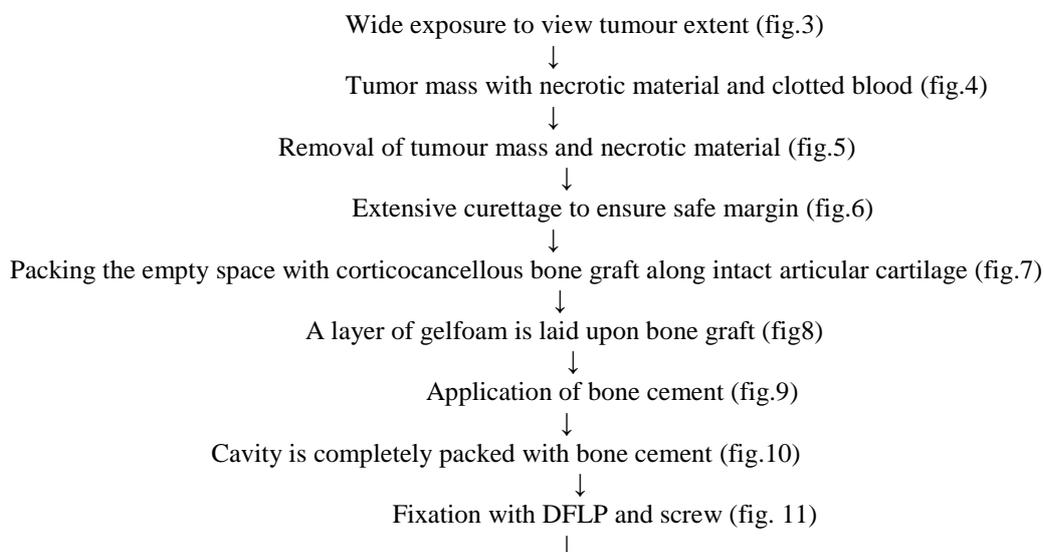
**Keyword:** Distal femur, DFLP, GCT, Joint salvage, Sandwich technique.

### I. Introduction

According to Mayo clinic series, GCT represents 5% of neoplasm of bone, most common age group 20-40 yrs [1]. Most common location is distal femur [2]. Although these tumours typically benign, pulmonary metastasis occurs in approximately 3% of cases[3]. GCT are frequently locally aggressive tumour[4]. We report a case of right distal femur GCT managed by sandwich technique to preserve articular cartilage of joint in 21 yrs female patient. The purpose is to evaluate result of Sandwich technique in the management of GCT for joint salvage.

### II. Case report

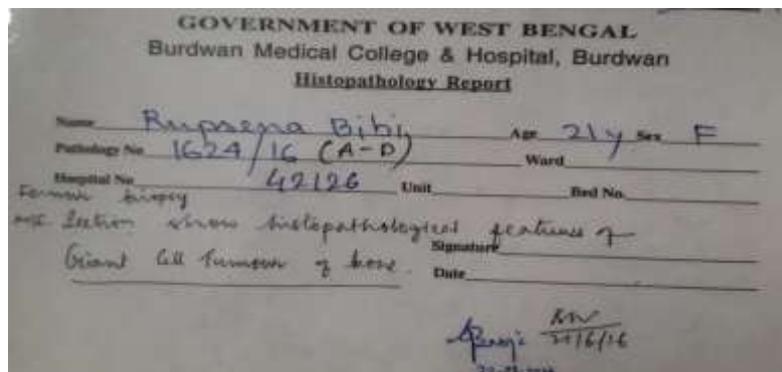
21 yrs female patient presented to orthopaedic OPD with complain of pain and swelling over lateral aspect of right distal femur since 6 months. Pain was initially during activity but since last 3 months pain was present even during rest. No history of significant trauma .General examination was unremarkable with no significant proximal lymphadenopathy and distal neurovascular deficit. Local examination revealed tenderness over lateral aspect of right distal femur with no skin changes and no local rise of temperature. Radiological examination of right distal femur with knee joint revealed eccentrically located lytic lesion that abut the subchondral bone (fig.1). MRI shows GCT of right distal femur with preservation of articular cartilage. Incisional biopsy shows GCT (fig.2)



Tumour mass with necrotic material was sent for Histopathological examination that confirmed diagnosis of GCT (fig.12)



**Fig.1**



**Fig.2**



**Fig.3**



**Fig.4**



**Fig.5**



**Fig.6**



**Fig.7**



**Fig.8**



**Fig.9**



**Fig.10**



Fig.11

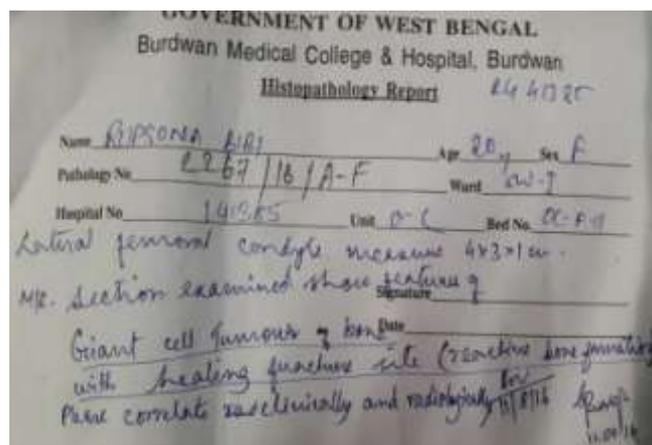


Fig.12

### III. Discussion

The most common site of GCT is distal femur in 20-40 yrs age group with slight female predominance eccentrically located in epiphysis and usually about the subchondral bone. Extensive curettage with preservation of articular cartilage should be done wherever possible [5]. The alternative option for filling the void space after curettage is either with bone graft or with bone cement [6]. Sandwich technique uses the advantage of bone graft and bone cement taking care of articular cartilage [7]. At final follow-up (after 1 yr), the functional evaluation is done using MUSCULOSKELETAL TUMOUR SOCIETY SCORE [8]

### IV. Conclusion

The sandwich technique reconstructing the subchondral bone after extensive curettage produce good functional result with low recurrence rate. Insertion of corticocancellous bridge between subchondral bone and bone cement may retard the process of early cartilage degeneration. The limitation of our study is short duration follow up (1yr only) and only one patient. Using sandwich technique joint salvage for GCT around joint without involving articular cartilage, may be a good option.

### Acknowledgement

Author sincerely thanks to patient and patient relatives.

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