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DENOSUMAB IN TREATMENT OF GIANT CELL TUMOR OF BONE

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Introduction

Giant cell tumour of bone (GCTB) is a giant-cell-rich bone lesion characterized by the presence of numerous multinucleated osteoclast-type giant cells. Although usually a benign tumor, GCTB frequently recurs locally after surgical resection. Histologically, GCTB has two cellular components: neoplastic mononuclear cells that are evenly scattered among osteoclast precursors and osteoclast-like giant cells. The osteoclast-like giant cells and their precursors express receptor activator of nuclear factor kappaB (RANK), and mononuclear stromal cells express receptor activator of nuclear factor kappaB ligand (RANKL). The recruitment of osteoclast-like giant cells is related to stromal cell expression of rankl and the giant cells are responsible for the aggressive osteolytic activity of the tumour. Denosumab is a fully human monoclonal antibody that inhibits RANKL (and therefore osteoclast activity).

- We report a case of GCT of distal femur with pathological fracture with breach in articular surface, in a 35 year old man in whom denosumab was used as neoadjuvant chemotherapy to reduce tumor size.
- After confirmation of tumor bulk reduction with the aid of CT scan, subsequently extended curettage and bone grafting was done. We have histologic confirmation of the effect of denosumab treatment on GCT
- Patient received denosumab post operatively for 6 months to prevent local recurrence.
- Patient was mobilised with non weight bearing post operatively for 6 weeks and then with partial progressive weight bearing. At six months follow up patient is comfortable and is walking pain-free, and is able to do all routine activities.