

Number & Title: 10644 - Role Of Bisphosphonates As An Adjuvant Therapy In The Management Of Giant Cell Tumours

Sudhir Kumar Garg**, *Purnima Aggarwal, *Rohit Jindal**, *Sandeep Gupta**
**Department of Orthopaedic Surgery, **Department of Radiodiagnosis*
Government Medical College & Hospital, Chandigarh, India**

Introduction: GCT is one of the commonest aggressive benign tumours among Asian population. Patients usually present late with large Stage 3 GCT which is associated with extensive bone destruction and extension into soft tissues. In such cases it is not possible to carry out extended curettage in areas where tumour has extended into soft tissue leading to high risk of local recurrence. It also requires extensive bone grafting to restore bone stock using allograft which is not easily available due to lack of bone banking facilities. Bisphosphonates which are known to induce apoptosis/inhibit activation of osteoclast and also increase osteoblastic activity has shown promising results in management of GCT. We have used bisphosphonates as an adjuvant treatment to increase bone formation to reduce the need for extensive bone grafting as well as to reduce incidence of local recurrence.

Materials & Methods: This study includes 34 consecutive patients with Stage 3 GCT. Proximal humerus was involved in 6 patients, proximal femur in 2, distal femur in 14, proximal tibia in 11 and distal tibia in 1 patient. All patients were treated with extended curettage using mechanical means such as burr & pulse lavage, chemical means such as hydrogen peroxide/phenol wherever possible. In order to support weak subchondral bone, structural graft in the form of tricortical iliac graft in 29 and fibular graft in 1 was used. In addition in one patient morselized allograft was used to fill the defect. In two patients with pathological fractures, internal fixation was done. Post-operatively all these patients were given minimum of three zoledronic acid injections, starting on third postoperative day and then every two months. 11 patients were also given oral risedronate for 6 months. All patients were followed at monthly interval. At each visit bone formation was evaluated using x-rays and function was assessed using MSTs score.

Results: In 33 patients (97%), progressive bone formation was observed to allow unsupported weight bearing or activities at 8 weeks. All these patients achieved good to excellent function with MSTs score ranging from 24 to 28. In one patient there was a large recurrence which was treated with en-bloc resection and endoprosthetic reconstruction.

Conclusions: Bisphosphonates when used as an adjuvant to extended curettage in Stage 3 GCT resulted in extensive bone formation in majority of patients (97%). It reduced the need for extensive bone grafting and also reduced the recurrence rate.