

## PP-104

### Denosumab avoids amputation in recurrent stage three giant cell tumors

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**Introduction:** Recurrent Enneking Stage 3 giant-cell tumours pose a threat for limb salvage surgery. RANKL inhibitor "denosumab" application could stop the tumour progression and enable the surgeon to perform limb salvage surgery in appendicular skeleton locations.

**Method:** 22 year-old female with stage 3 giant-cell tumour of left distal radius was treated by curettage and autografting at another institution a year ago and recurred at post operative 3rd month. The tumour had extended to the first carpal row and soft tissues. Madelung-like deformity of wrist and marked swelling of forearm with median nerve irritation was present. The patient was offered amputation elsewhere but she refused. Instead of amputation, application of 6 cycles of denosumab (XGEVA- by AMGEN) 120 mg subcutaneous injection monthly had stopped tumour progression. The preoperative and postdenosumab X-rays and MRI investigation showed well defined calcified borders, marked fibrosis and moderate mineralisation of the tumour. Therefore, local wide excision of distal one third of left distal radius together with the first carpal row was performed satisfactorily. Arthrodesis of the wrist in anatomical grasp position with fibular shaft allograft and titanium plate and screws could be performed. Resected specimen was examined in pathology department. On macroscopic examination; tumoral mass was localized in the epiphysis and metaphysis of the distal radius. Diameter of the tumour was 4,5x4x3 cm. Tumour had extended to the articular surface. Cut surface of the tumour had showed yellow-white hard sclerotic areas. On microscopic examination; giant cells and mononuclear cells were disappeared in tumoral area and fibrosis had begun to replace mononuclear, giant cells. The patient kept on 3 more cycles of denosumab 120 mg per month postoperatively.



Figure 1.



Figure 2.

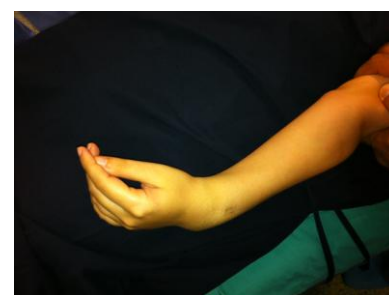


Figure 3.



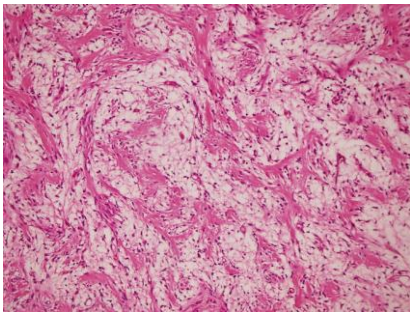
Figure 4.



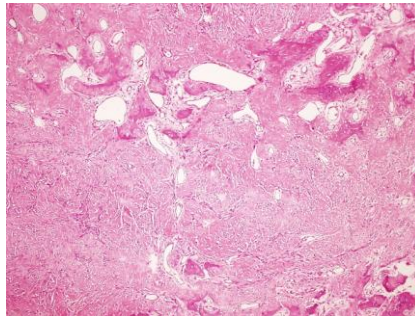
Figure 5.



Figure 6.



**Figure 7.**



**Figure 8.**



**Figure 9.**

**Results:** 6 months after the operation, the graft showed union to the host and no local recurrence was present. No serious side effect of denosumab was observed in the patient. Renal functions of the patients were normal. No postoperative infection had occurred.

**Conclusion:** Denosumab is not only effective for difficult surgical areas at axial skeleton but also prevents unnecessary amputations in recurrent stage 3 giant-cell tumour of bone of appendicular skeleton with low morbidity.