

DENOSUMAB ALLOWS SURGICAL RESECTION OF SOME PREVIOUSLY UNTREATABLE GIANT CELL TUMOURS OF BONE

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INTRODUCTION

Giant Cell Tumours account for 5% of all primary bone tumours. Their proximity to joints in the appendicular skeleton and neural structures when located in the spine make them challenging to treat. Recent pharmacological advances in osteoporosis treatment have provided us with Denosumab, a monoclonal antibody therapy that directly targets the RANKL receptor. It is being evaluated in a number of trials for its usefulness in metastatic bone disease and more recently for surgically untreatable giant cell tumours of bone.

AIMS

This study examines a small subgroup of patients with GCT of bone in anatomically challenging areas. We examined whether tumours that would previously have been considered surgically untreatable without significant morbidity or loss of function were rendered feasible as a result of Denosumab therapy.

METHODS

20 Giant Cell tumour cases were collected over a period of 4 years. Cases felt to be unresectable or requiring radical resection were given Denosumab therapy in order to down-grade the disease to a resectable form (n=7). Of those patients there were 2 males and 5 females, mean age 27years. Sites of disease included the sacrum (1 case), the spine (1 case) and limbs (5 cases). Denosumab therapy was administered for 8 weeks pre-operatively and patients also underwent a pre and post-treatment CT PET scan to assess their disease burden and to check for metastatic disease.

RESULTS

In 6 cases with previously unresectable disease Denosumab therapy converted them to surgically treatable disease. In 1 case (sacrum) the disease was controlled on maintenance Denosumab therapy without recourse to surgery. The mean SUVmax reduction on PET scanning was 68%. All patients are alive and functioning well

at the time of writing. Of the surgically treated cases three (50%) returned for a second curettage. 1 case had a significant relapse requiring resection of the distal radius and vascularised fibular grafting. 1 (spinal) case returned for infected metalwork

CONCLUSION

Denosumab can be an effective adjunct in the treatment of difficult to resect Giant Cell Tumour of Bone. In five out of seven cases in our study, apparently surgically untreatable disease was made more amenable to resection. In one case the disease has been controlled by denosumab therapy alone. Denosumab is an effective therapy in this difficult to treat condition and may reduce surgical morbidity.

Level of evidence IV: Case series