Management of Giant Cell Tumours of the Distal Radius, Recurrence rates and Suggested Surgical Treatment

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Introduction

Treatment of giant cell tumours of the distal radius is problematic, with recurrence rates being consistently higher than other sites. What evidence there is relies on small case series, the majority numbering fewer than forty patients. Rates of between 25-89% are quoted for intralesional excisions; although recurrence rates for en bloc resection tend to be lower (0-33%). However, although these techniques provide generally lower recurrence rates, these procedures come at the potential disadvantage of needing to sacrifice the articular surfaces, theoretical decreased function and limited revision options in the case of recurrence. Despite much research, no clear consensus has emerged in how to best treat these tumours and their respective tumour Campanacci grades.

Method

This case series retrospectively looked at all giant cell tumours of the distal radius treated at the Royal Orthopaedic Hospital Bone Tumour Unit between 1988-2013, looking at the treatment each patient received and ultimately their outcome with regards local recurrence and functional status using the Toronto Extremity Salvage Score (TESS). Treatment options included: Simple Curettage, Curettage with supplementary cementation of the cavity, or en bloc excision followed by endoprosthetic replacement or bone grafting and arthrodesis.

Results

Forty-three patients were identified. The mean length of follow up was 164.7 months. The overall recurrence rate was 30.2% with a mean time to recurrence of 31 months. Recurrence rates for Campanacci grade 3 tumours ranged from 67% for curettage alone, to 14.3% following en bloc excision. Functional outcomes varied with TESS from 86.2% with simple curettage alone to 57.4% following curettage with cementation.

Conclusion:

It is clear from the results that overall the use of PMMA cement to supplement curettage reduces recurrence rates in all Campanacci grades treated surgically. This study also shows that there was a reduction in local recurrence rates in Campanacci Grade 3 tumours treated with en bloc resection and reconstruction compared with intralesional curettage and cementing (33% v 14.3%). Of note, in Campanacci grade 3 patients, there is no difference in functional outcomes between those treated with en bloc excision v curettage and cementation (57.9% v 57.4%) Curettage and cementation of a giant cell tumour of the distal radius reduces the risk of recurrence and we would no longer advocate simple curettage of a distal radius lesion. There does appear to be a higher recurrence rate in grade 3 tumours treated with intralesional excision and cement versus en bloc excision with no resultant difference in functional outcomes.

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