

Abstract Number 10792

Giant Cell Tumor Of Bone. Surgical Management Of 168 Patients At A Single Institution.

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Background

Giant cell tumor of bone represents a challenge for the musculoskeletal oncologist. Despite their benign histologic features, they tend to be locally aggressive. Typically affecting young, active patients in periarticular locations, they have been historically associated with functional impairment, high recurrence rates and risk of pulmonary metastases. The aim of this study was to determine the epidemiology aspects and surgical outcomes in a series of Hispanic patients treated for giant cell tumor of bone at a single institution.

Patients and methods

The records of 168 patients treated between 2001 and 2011 at our institution for histologically confirmed giant cell tumor of bone, with a mean follow up of 5 years (minimum 19 months) were reviewed retrospectively.

Results

We identified 91 women and 77 men. Mean age at diagnosis was 32.7 years, range 13 to 70 years. 9.5% of patients were older than 50 years. 63% of tumors involved the knee, with distal radius being the third location in frequency (13.7%). Other sites included metacarpus, metatarsus, patella and sacrum with similar distribution. Initial stage was classified as Enneking I in 6% of cases, II in 16% and III in 78%. 33 patients presented initially with a pathologic fracture. Surgery included extended curettage with highspeed bur and liquid nitrogen, argon beam, phenol or electro cauterization in 54.9% of cases, en bloc resection in 40,5% and combined treatment in 5%. In cases with articular surface involvement, reconstruction was performed with structural allograft in 38 patients, endoprosthesis in 16 patients and arthrodesis in 14 patients.

10 recurrences were identified. 7 after intralesional treatment, 2 after wide resection and 1 after combined treatment. No statistical differences in local adjuvants use regarding recurrence rate were found. Time to recurrence was 12.6 months (range 3 to 37 months). Overall recurrence was 5.9%. No patients received radio or chemotherapy. 2 patients developed pulmonary metastasis of benign nature. 86% of patients had a good or excellent score in Enneking functional score.

Conclusions

A rational and methodical approach to the surgical treatment of giant cell tumors provides good functional recovery and low recurrence rates. Patients in any stage, without articular cartilage involvement are best treated with extended curettage, local adjuvance and bone cement augmentation. Patients with stage III and articular compromise are amenable to treatment with wide or combined resection and reconstruction. We encourage the use of osteochondral allografts over endoprosthesis in young patients, given their more predictable results in the long term. Local recurrences are rare after 3 years of surgery.