

## **Pasteurized Osteo-articular Autologous Graft for Reconstruction of the Proximal Humerus after Resection of Bone Sarcoma**

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**INTRODUCTION:** For skeletal reconstruction in surgery for bone tumors, pasteurization of bone has been used with favorable results over other methods of recycling.

**METHODS:** Methods: Twenty patients with osteosarcoma (ten patients) and chondrosarcoma (ten patients) of the proximal humerus were treated by wide margin resection and reconstruction with pasteurized osteo-articular autologous bone graft. They were 14 females and six males, between 7 and 30 years of age who were followed up for at least 3 years (mean, 42 months). The International Society of Limb Salvage graft evaluation method was used for evaluation of the radiographs.

**RESULTS:** Results: Sixteen patients (80%) had complete incorporation of the graft and four patients (20%) had partial incorporation. Viability of the grafts was evaluated by bone scintigraphy. Of 20 patients evaluated, uptake was detected in 14 patients from approximately 6 months postoperatively after which it increased gradually. The functional results were assessed by the system of the Musculoskeletal Tumor Society, and the mean functional rating was 86%. Fifteen patients have been disease free (six osteosarcoma and nine chondrosarcoma), one osteosarcoma patient alive with disease and four have died of disease (three osteosarcoma and one chondrosarcoma). Resorption of the graft was seen in three osteosarcoma patients under the age of ten (15%), no fracture or infection were seen. Local recurrence was detected in single chondrosarcoma patient.

**DISCUSSION AND CONCLUSION:** Conclusions: These results indicate that pasteurization of bone may be a useful option for reconstruction after resection of sarcoma of the proximal humerus. In skeletally immature patients resorption of the graft is noticed. The advantages of extracorporeal pasteurization include convenience of use, avoidance of intraspecies infection and allogenic reactions, and satisfactory bone remodeling.