

Artificial bone graft for benign bone lesion

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Purpose: This study evaluated the long-term outcome of surgery using artificial bone grafts for benign bone lesions.

Patients and Methods: Between 2000 and 2013, 158 patients underwent artificial bone grafting after curettage of the benign bone lesion (129 primary cases and 29 recurrent cases). Histological types included giant cell tumors (GCT, 43 cases), simple bone cysts (SBC, 36), enchondroma (21), chondroblastoma (21), aneurysmal bone cysts (ABC, 10), etc. The amount artificial bone used, the period of non-weight bearing, complications, and serial radiographic changes were evaluated.

Results: The mean follow-up period was 33 months. Calcium phosphate cement (CPC) was used in 124 patients (mean, 29 mL; range, 1-129 mL) and β -tricalcium phosphate (β -TCP) was used in 28 patients (mean, 9 g; range, 0.5-45 g). Complications such as postoperative fever (10 patients), noninfectious hydrarthrosis (10) or discharge (2), and superficial wound infection (1) were observed. Twenty-three patients (9 SBC, 6 GCT, 3 ABC, etc.) displayed local recurrence, although 11 of them were recurrent cases. In all cases, CPC was radiographically well adapted to the surrounding host bone and β -TCP was replaced with neonatal bone as of the final follow-up. The mean period of non-weight bearing was 17 days with CPC and 30 days with β -TCP.

Conclusions: Although a few complications were encountered with both CPC and β -TCP, CPC appears to offer a useful bone substitute for the treatment of benign bone lesions, and it enables early weight bearing without internal fixation in spite of a huge defect.