O13:101

Allografts versus Iliac Crest Autografts as a Bone Void Filler

William Ward[1], Thomas Rusher[1], Fred Dorey[1]

[1)] Guthrie Clinic, United States

The senior author began practice in 1991 using iliac crest bone graft almost exclusively as a bone void filler; his practice subsequently evolved into utilizing allograft bone almost exclusively as a bone void filler, creating a unique opportunity to compare the rates of success for the two bone graft types.

We reviewed the surgical case registry of the senior surgeon to identify all cases of bone void filler graft for six benign bone tumors treated over a 20 year period. The charts were reviewed to determine the type of graft utilized, the rates of local recurrence and reoperations for aneurysmal bone cysts, chondroblastomas, enchondromas, non-ossifying fibromas, osteoid osteomas and unicameral bone cysts. All were treated with curettage followed by an iliac crest autograft or an allograft. Allograft types utilized included cancellous allograft (C-Allo), corticocancellous allograft (CC-Allo), or a combination of allografts with cortical strips or struts (Combo); the vast majority of allografts were supplemented with demineralized allograft bone matrix.

Preliminary results (evaluating 331 cases) indicate a tumor recurrence rate of 11.8% (26/221) with allografts compared to 14.6% (16/110, p=n.s.) with iliac crest autografts and a reoperation rate for allograft bone grafts of 17.2% (38/221) compared to 23.7% (25/110, p=n.s.) in the autograft group. Among the allograft groups, the reoperation rate was 39.1% (9/23) in the Combo group compared to 14.1% (17/121) in the cancellous allograft group and 15.6% (12/77) in the corticocancellous group (p=0.023). There was no statistically significant difference in the recurrence rates for the different graft types, but there was a trend for a higher recurrence rate in the Combo group (26.1%, 7/23) that was not statistically different (p=0.136). Unicameral bone cysts were the most persistent of the tumor types with more recurrences (24/76, 32%) than any other diagnostic group. None of the enchondromas recurred (0/104, 0%).

These findings demonstrate that for these six entities, allograft bone graft performed as well as autograft. The higher reoperation rate with the Combo allograft group is thought to simply be a reflection of the fact that Combo grafts were used primarily in larger lesions with greater bony compromise. These findings support the continued use of allograft bone graft as a bone void filler for the treatment of the six entities studied.

E-mail (main author): Ward_William@Guthrie.org