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Restoring function after excision of the femur/humerus in primary bone tumors - Results with a “low cost” total bone prosthesis

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Objectives: Rarely, extent of tumor may necessitate resection of the complete bone to achieve adequate oncologic clearance in bone sarcomas. We present our experience with reconstruction in such cases using an indigenously manufactured low cost total femoral prostheses (TFP) and total humerus prostheses (THP). We assessed the complications of the procedure, the oncologic and functional outcomes and implant survival.

Methods: Twenty six patients, fourteen males and 12 females with a mean age of 26 years operated between June 2001 and October 2009 had a total bone replacement (8 TFP and 18 THP). The diagnosis included osteogenic sarcoma (12), Ewing's sarcoma (9), chondrosarcoma (5). Mean follow-up was 39 months (9 to 120 months) for all and 51 months (24 to 120 months) in survivors.

Results: There were 6 local recurrences and fifteen patients are currently alive at time of last follow up. The Musculoskeletal Tumor Society score for patients ranged from 16 to 25 with a mean of 23 (77%). The implant survival was 92% at 5 years with one TFP needing removal because of infection and one THP because of local recurrence.

Conclusions: A total bone prosthesis in appropriately indicated patients with malignant bone tumors is oncologically safe. Functional outcome is good using an implant that provides consistent and predictable results with low complication rates after excision of the total femur or humerus.

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