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Total femur prostheses for reconstruction after resection of sarcomas.

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Background. The choices of treatment for patients with extensive tumors of the femur include total femur mega-prosthesis or large allograft-prosthetic composites. Previous reports suggest variable survival ranging from 60-70% at 1 to 2 years. However, these studies described earlier prostheses and techniques. To confirm previous reports we determined risk of local recurrence, overall survivorship and function in patients with total femur reconstructions for tumors.

Methods. We retrospectively reviewed 26 patients with total femur megaprotheses implanted between 1987 and 2010 after resection of bone tumors. Two patients lost at followup were excluded; the remaining 24 included 15 males and 9 females with a mean age of 27.2 years. The mean followup was 5.3 years (range, 5 months - 23 years). Function was assessed according to the MSTS system II.

Results. One patient developed a local recurrence during followup (4.1%). At last followup, ten patients were continuously disease free at a mean of 11.1 years, one patient had no evidence of disease after treatment of a recurrence, another patient had no evidence of disease after treatment of a pulmonary metastasis, and 12 patients died of their disease at a mean time of 1.5 years. In 21 patients evaluated with the MSTS score, the mean score was 68.41%; seven patients had over 75%, eleven from 51% to 75%, three from 26% to 50%. Four patients (16.6%) had complications requiring further surgery in absence of trauma. A fifth patient had a post-traumatic periprosthetic fracture.

Conclusions. A total femur prosthesis allows a limb-preserving procedure in tumors with extensive femoral involvement or in the presence of a skip lesion along the femur. The prognosis of these tumors requiring total femur resection is poor, but this reconstruction provides good function with a relatively low rate of major complications.

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