

Functional outcome of total femoral endoprosthetic replacement following excision of bone and soft tissue sarcomas

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Backgrounds

The most progressive form of endoprosthetic reconstruction is a total femoral endoprosthetic replacement with excision and replacement of the total femur and both the hip and knee joints. This procedure is commonly used as an alternative to disarticulation of the hip following extensive excision of a tumor of the femur, or in cases of aseptic loosening, infection or peri-prosthetic fracture following femoral replacement with severe bone loss. To date, there have been very few studies on the oncological and functional outcome of patients who have undergone total femur procedure for bone and soft tissue sarcomas.

Questions / purposes

We determined the clinical characteristics, complications, and functional outcome in patients treated with total femoral endoprosthetic replacement for bone and soft tissue sarcomas over the last 15 years.

Materials and Methods

The study was a retrospective analysis of clinical and functional outcomes in a series of seven total femoral endoprosthetic replacement following excision of bone and soft tissue sarcomas from 1999 to 2013 at our institution. We examined about gender, age, histology, TNM classification, operation time, amount of bleeding, complications, prognosis, and functional outcome. Functional outcome was evaluated using the MSTTS score.

Results

There were four male and three female with an average age of 30 years (17–45 years) at the time of surgery. Six of the patients had primary malignant bone tumors (five osteosarcomas, one

Ewing's sarcoma), and one had metastatic bone tumor of malignant soft tissue tumor (Alveolar soft part sarcoma). The mean follow-up was 43 months (8-150). The mean operation time was 7h51min, and the mean amount of bleeding was 921ml. Complications occurred in three patients. One had femur head migration after 11 years of total femur reconstruction. Infection occurred in two patients, none of who required removal of the prosthesis. There were no mechanical failures and no patients who were necessary to revision of prostheses. Amputation was necessary in one patient because of skip metastasis of tibia. Five patients were still alive of which two were continuous disease free (CDF) and no evidence of disease (NED). The mean Musculoskeletal Tumor Society (MSTS) functional outcome score was 16 (53%, 10-23).

Conclusions

Total femoral endoprosthesis replacement can provide good functional outcome without compromising patient survival, and in selected cases provides an effective alternative to amputation.

Level of Evidence

Level IV, therapeutic study. See Guidelines for Authors for a complete description of levels of evidence.