

## Is total femoral replacement for non-oncologic and oncologic indications a safe procedure in limb preservation surgery? A single center experience of 22 cases

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### BACKGROUND

Several surgical options for the reconstruction of massive bone defects have been described and include biologic methods with autografts and allografts, and the use of tumor endoprostheses (total femoral replacement, TFR). Several types of modular TFR are available, but nevertheless unpredictable outcomes and high complication rates have been described from most authors. The present study aims to compare results after TFR performed with modular total femur prosthesis MML (Fa. ESKA/Orthodynamics) in patients with and without malignant disease.

### METHODS

Retrospective chart review and functional investigation (Musculoskeletal Tumor Society (MSTS) score, Harris Hip Score (HHS), Oxford Knee Score (OKS), SF-12 Health Survey, and failure classification according to Henderson) of TFR cases from 1995 to 2011. Indications for TFR were malignant tumor resection from the femur (n = 9, Group A) or failure of a revision arthroplasty without history of malignant disease (n = 13, Group B).

### RESULTS

Thirty-six patients were treated during the study period, of whom 22 could be investigated clinically after a mean follow-up of 63 months. Overall failure rate for TFR was 59.1%, leading to 38 surgical revisions. The most common failure mechanisms were Type I (soft tissue), followed by Type IV (infection) and Type III (mechanical failure). Mean MSTS score out of 30 was 13 (range 1-25), with significantly higher scores in Group A (mean 19, range 3-25) than Group B (mean 9, range 1-15).

### CONCLUSION

TFR is an established procedure to restore femoral integrity. However, complication rates are considerably high, and depend mainly on the age at initial reconstruction.

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