

Short- to long-term follow-up of total femoral replacement in non-oncologic patients

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BACKGROUND

Compromised bone stock and heavily impaired structural integrity after multiple endoprosthetic revision surgeries can lead to a comparable condition as encountered in musculoskeletal tumor surgery. Total femoral replacement (TFR) can restore femoral integrity and allow patients to resume ambulation. Even though several authors reported their results of TFR, so far many questions are still on debate: Which patients are at risk to experience low functional outcome? Do complications and clinical outcome after TFR depend on the indication for the surgery (e.g. periprosthetic fractures or aseptic loosening) or the age of the patients? The purpose of the present study was to compare complication rates after TFR performed with modular total femur prosthesis MML (Fa. ESKA/Orthodynamics) in patients without malignant disease.

METHODS

We conducted a retrospective chart review and functional investigation of patients treated with a TFR for non-oncologic conditions from 1995 to 2015 and a minimum follow-up of 2 years. Complications were recorded according to the Henderson-Classification; outcome was evaluated with established clinical scores. The indication for TFR was periprosthetic fracture (Group A, n = 11) or aseptic loosening (Group B, n = 7) with massive bone defect of the femur deemed unsuitable for conventional arthroplastic or biologic reconstruction.

RESULTS

Eighteen patients matched the inclusion criteria and could be investigated clinically after a mean follow-up of 80 months (range: 28-132). Before TFA, all patients had previously undergone multiple operations (range: 1-8). The overall failure rate for any reason was 72% (n = 13/18), leading to a total of 37 surgical revisions with total exchange of TFR in 22% (n = 4/18). Most common failure mechanism was Type I (soft tissue), followed by Type IV (infection) and Type III (mechanical failure). According to Enneking's functional evaluation method (MSTS-Score), the function ranged from 1 to 15 with a mean of 10 ± 4 out of 30.



CONCLUSION

TFR is a salvage procedure to restore mechanical integrity and regain functional ability after extensive femoral bone loss. Outcome of the patients in the present study did mainly depend on the age at reconstruction and not on the indication for TFR.

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