

Mid-Term Survival and Function of Hip Endoprosthetic Replacement for Non-Tumour Indications

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Introduction:

The burden of complex revision hip arthroplasty is increasing. Endoprosthetic replacement (EPR) is a proven limb salvage option in tumor surgery. It is a possible option for the management of massive bone loss around failed hip implants. However, the outcome of such procedures has received little attention. The aim of this study was to determine the mid-term survivorship and functional outcome of EPRs performed for non-tumour indications around the hip joint.

Methods:

Since 2007, 80 EPRs were performed for non-tumour indications in a single tertiary centre by six surgeons. The study's mean follow-up was 4 years (range: 1-10). The majority of patients were female (n=52, 65%) and the mean age at surgery was 69 years (range: 28-93). Indications for EPR included infection (41, 52%), non-union following complex fracture (13, 16%), peri-prosthetic fracture (11, 14%) and loosening (8, 10%). The mean number of previous procedures was 2 (range: 0 - 17). Implant survival was established, with revision or further surgery with removal of components as end points. Functional outcome was determined using Short Form -12 (SF12) and the Oxford Hip Score (OHS).

Results:

At follow-up, 14 (18%) patients were deceased and 5 were lost to follow-up. The overall complication rate was 30%. There were 10 infections, 5 of which were treated with DAIR (debridement, antibiotics, and implant retention) and 5 who underwent further revision EPR surgery. Other complications included dislocation (n=3), peri-prosthetic fracture (n=5) and pulmonary embolus (n=2). The overall survival at 5-years was 90% (95% CI: 81 - 100%). The average OHS was 28 (SD=12). Functional outcome following failed osteosynthesis of complex trauma (OHS: 38) and peri-prosthetic fracture (OHS: 37) was significantly better than that of infection (OHS: 24) (p=0.006).

Discussion and Conclusion:

This mid-term study shows that EPR around the hip is a valuable management option with acceptable functional outcome for limb salvage in complex revision cases. These results are comparable to those performed for revision THRs. However, infection was an independent predictor of inferior functional outcome. This is possibly attributed to the 3-fold higher number of previous procedures undertaken in this cohort and their poor soft tissue envelope compared to the non-infected cohort. As EPR is the last choice of limb salvage in multiply revised hip arthroplasty, it should form part of the routine armamentarium of the revision hip surgeon.

Summary:

Salvage of failed revision THRs with Endo-Prosthetic Replacement (EPR) has a 5-year survivorship of 90% and OHS of 28. Proximal femur EPR is a valuable option for the increasing burden of complex revision hip surgery.