Revision Distal Femoral Replacements Have Nearly a 40% Failure and Reoperation Rate

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INTRODUCTION:
Distal femoral replacement (DFR) is a complex reconstruction option for those with substantial bone loss, often following multiple failed revision total knee arthroplasties (TKA). However, Survivorship after DFR is only 70-85% and there is a paucity of literature evaluating outcomes following revision DFRs. Therefore, the purpose of this study is to analyze the survivorship of revision DFR.
METHODS:
This retrospective study identified all patients who underwent consecutive DFR at our institution between 2004 and 2022. Among that population, those who failed DFR and underwent revision DFR were analyzed in this study. All patients had a minimum two-year follow-up. The primary outcomes were re-operation and survivorship. Secondary outcomes included mechanisms of failure, readmissions, amputations, and death.
RESULTS:
235 patients underwent DFR, of which 64 (27.2%) patients subsequently underwent revision DFR. 25 of the 64 patients (39.1%) failed revision DFR and had a re-operation. At most recent follow-up, patients with revision DFRs had a 90-day readmission rate of 42.2%, an amputation rate of 7.8%, and a mortality rate of 12.5%. The average time-to-death was 2.43 years, while the average time-to-failure was 323 days. Of the failed revision DFRs, 16 (64%) were for periprosthetic joint infection (PJI), 4 (16%) for soft tissue failure, 3 (12%) for aseptic loosening, and 2 (8%) for periprosthetic fracture (PPFx). Younger age (65.6 vs. 71.2 years, P=0.029) and male gender (56.0% vs. 25.6%, P=0.050) were significantly associated with failing revision DFR.
DISCUSSION AND CONCLUSION:
DFR is a viable option for patients with significant bone loss following revision TKA. However, in those who fail and undergo a revision DFR, the outcomes are substantially worse. The exceedingly high rate of early failure, amputation, and death after revision DFR need to be considered when indicating and educating patients on this treatment option.