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## Survivorship, Complications, and Outcomes Following Distal Femoral Replacement Using Megaprosthesis

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## **SI/CTR Abstract**

### **Survivorship, Complications, and Outcomes Following Distal Femoral Replacement**

#### **Using Megaprosthesis**

**Keenan Sobol BS, John Strony BS, Timothy Tan MD, Scot Brown MD\***

#### ***Introduction***

Distal femoral bone loss is often managed with a combination of modular prostheses, structural and non-structural allografts, and metal augmentation. However, when bone loss of the distal femur is severe, the viability of these methods can be limited. In the setting of severe bone loss, endoprosthetic reconstruction (EPR) with a megaprosthesis has become increasingly popular for both malignant and non-neoplastic indications. The primary aim of this study was to determine the short-term prosthesis survivorship, as well as complications, for patients who presented with non-neoplastic disease indications for megaprosthesis distal femoral replacement (DFR) at a single institution. The secondary aim was to identify factors that influenced the outcome of DFR.

#### ***Methods***

A retrospective review was performed to identify patients who underwent megaprosthesis DFR surgery for a non-neoplastic indication, including native and preprosthetic fractures, septic and aseptic nonunion, periprosthetic joint infection (PJI), and aseptic loosening or mechanical failure of a previous prosthesis. Information regarding complications, reoperations, demographics and comorbidities were recorded, excluding patients with less than 24 months follow-up. Reoperation for implant failure was used as the final endpoint for survivorship.

## ***Results***

Seventy-five patients were identified. DFR survivorship was 86% at one year and 76% at five years. Patients who sustained a native fracture or had non-union demonstrated the highest survival rate at one and five years, (91%, 82% respectively) followed by patients with aseptic loosening or mechanical failure of previous implants, and then patients with PJI. A total of 36 (48 %) patients experienced at least one post-operative complication and 27 patients (36%) required at least one reoperation. Fracture, aseptic loosening, and PJI were complications more likely to require reoperation for prosthesis failure.

Furthermore, patient demographics and comorbidities were not significant for predicting failure.

## ***Discussion***

DFR is a viable surgical option for significant distal femoral bone loss with good short-term survivorship. There is a high overall complication rate, however the complication profile, as well as survivorship may vary based on the initial indication for DFR.