

**Outcomes of Vancouver C Periprosthetic Femur Fractures**

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**Purpose:** Periprosthetic femur fractures (PFFs) that occur distal to a total hip arthroplasty (THA), Vancouver C fractures, are challenging to treat. While much has been written about Vancouver B PFFs, there are limited data on Vancouver C fractures. We aimed to report patient mortality, reoperations, and complications following Vancouver C PFFs in a contemporary cohort all treated with a laterally based locking plate.

**Methods:** We retrospectively identified 42 consecutive Vancouver C PFFs in 41 patients between 2004 and 2018. There was a high prevalence of comorbidities, including 9 patients with neurologic conditions, 9 with a history of cancer, 8 diabetics, and 8 using chronic anticoagulation. Fractures occurred following primary THA in 74%, and revision THA in 26%. Mean time from THA to PFF was 6 years (range, 1 month to 25 years). All fractures were treated with a laterally based locking plate. Fixation bypassed the femoral component in 98% of cases and extended as proximal as the lesser trochanter in 27%. Kaplan-Meier survival was used for patient mortality, and a competing risk model was used to analyze survivorship free of reoperation and nonunion. Mean follow-up was 2 years.

**Results:** Patient mortality rate was 5% at 90 days and 31% at 2 years. Cumulative incidence of reoperation was 13% at 2 years. There were 5 reoperations including revision osteosynthesis for nonunion and / or hardware failure (2); irrigation, debridement, and hardware removal for infection (2); and removal of hardware and total knee arthroplasty for posttraumatic arthritis (1). Cumulative incidence of nonunion was 10% at 2 years.

**Conclusion:** Patients who sustained a Vancouver C PFF had a high mortality rate (31%) at 2 years. Moreover, 13% of patients required a reoperation within 2 years, most commonly for infection or nonunion.