

Annual Meeting Podium Session I:
Fragility Fractures & Periprosthetic Fracture I

Choosing Wisely: Revision or Fixation for Vancouver B2-B3 Femoral Hip Periprosthetic Fractures? Insights from 485 Cases

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Purpose: Revision arthroplasty is the recommended management for Vancouver type B2 and B3 femoral hip periprosthetic fractures (FH-PPF). There is a debate whether management with internal fixation can be a valid option. We hypothesized that fixation in selected patients presents no differences in mortality, complications rates, and functional outcome.

Methods: Multicenter prospective cohort study in 485 patients with type B2 and B3 FH-PPF managed with internal fixation (n=164) versus revision arthroplasty (n=321) (January 2021 to May 2023). Risk factors for one-year mortality and clinical outcomes were assessed with uni- and multivariate logistic regression analysis. Propensity score matching was analyzed for age, pre-fracture mobility, pre-fracture place of residency, age adjusted Charlson comorbidity index (a-CCI), Pfeiffer, ASA, and CFS.

Results: Patients in the fixation group were older (88(8) vs 82(15) $p<0.001$) (medians and interquartile range), more living at a health institution (21,34% vs 10.9%, $p=0.003$), with less functional mobility ($p=0.01$), more cognitive impairment (Pfeiffer's SPMSQ 3(4) vs 2(4) $p<0.001$), and worse a-CCI (5(2) vs 5(2) $p=0.001$) than patients managed with revision. One-year mortality was higher for the fixation group 25% vs 14,3% ($p=0.004$), but there were no differences for in-hospital, 30-days, and 6-months mortalities. There were no differences in medical complications at any time ($p=0.83$), with more surgical complications at 30-days follow-up in the revision arthroplasty group (18.3% vs 26.8%, $p=0.05$), but no differences at 6-months or 1-year follow-up ($p=0.85$ and $p=0.51$). In the multivariate analysis a-CCI, cognitive impairment, B3 fractures and pre-fracture independent walking impairment were independent risk factors for mortality. The propensity score matching showed that at one-year follow-up there were no differences between both treatment groups in the change of place of residency, walking ability, mental impairment, change of CFS, EQ-5D, rate of complications, and up to 6-months mortalities. Male gender, a-CCI, cognitive impairment, medical and surgical complications and weight-bearing restrictions at 30-days were independent risk factors for mortality.

Conclusion: In our population, fixation management in selected patients, allowing unrestricted weight-bearing, presents no differences in functional outcomes compared to revision arthroplasty.