

Cannulated Screws or Hemiarthroplasty for Femoral Neck Fractures: Is there a Mortality Difference?

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INTRODUCTION: Historically, relatively stable femoral neck fractures (FNFx) in elderly patients have been treated with in-situ cannulated screw fixation (CS) while displaced fractures have been treated with hip arthroplasty. Several studies have focused on radiographic fracture characteristics attempting to predict which fractures, when treated with CS, would result in failure and need for conversion arthroplasty. It has been assumed that, because of the increased surgical insult, patients undergoing hemiarthroplasty (HA) would experience more perioperative complications and increased mortality. This study aimed to compare elderly patients with FNFx treated with CS or HA, and determine if HA is associated with increased perioperative morbidity and mortality.

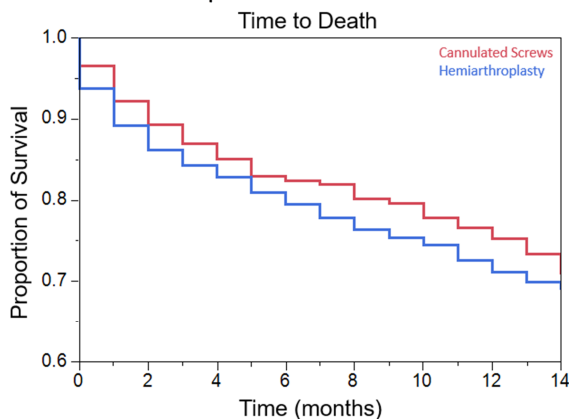
METHODS:

We retrospectively identified patients over age 60 with FNFx (OTA 31-B) treated with HA or CS between 2001 and 2018. A total of 2,211 patients were included, 1,721 were treated with HA and 490 with CS. The primary outcomes collected were mortality and reoperation rates in addition to transfusion requirements and hospital length of stay. Kaplan-Meier estimation and Cox Proportional-Hazards modelling were used to assess time to event outcomes. Odds ratios were used to compare mortality between the cohorts at 30 days, 90 days, and 1 year. Multivariate analysis was used where appropriate. Mean follow up was 19 months.

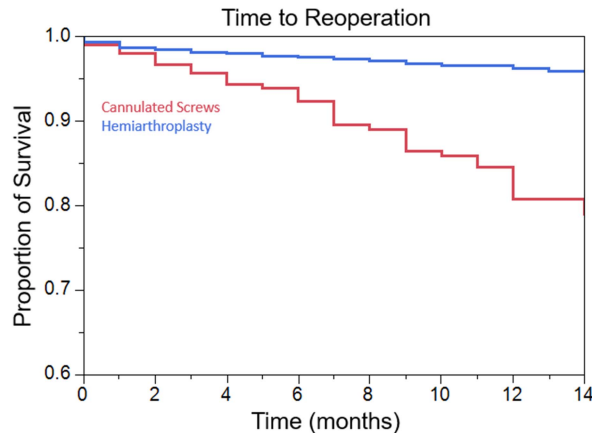
RESULTS: One-year mortality was 24.7% for the CS group and 28.8% for the HA group, but overall survival was not statistically significant ($p=0.99$). The rate of reoperation at one year was 19.2% and 3.8% for CS and HA respectively; overall, HA has a lower reoperation rate ($p<0.0001$). Among patients treated with HA compared to CS, the overall mortality risk ratio was 0.90 (95% CI, 0.78-1.03). The reoperation risk ratio of CS compared to HA was 6.47 (95% CI, 4.38-9.51). Thirty day, 90-day, and 1-year mortality odds ratios and their 95% CI for HA vs. CS were 1.40 (0.78-2.49), 1.08 (0.74-1.57), and 1.25 (0.93-1.67), respectively.

DISCUSSION AND CONCLUSION:

Patients with FNFx treated with HA were not associated with increased risks of short-, mid- or long-term mortality when compared to those treated with CS. Hemiarthroplasty treatment was associated with a significantly lower reoperation risk when compared to CS across the lifetime of the patient.



*Graph is limited to 14 months, however statistics were performed for long-term mortality



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