

Surgical Fixation of Ballistic Femoral Neck Fractures: A Futile Effort or Job Well Done?

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INTRODUCTION: The overall complication rate of ballistic fractures are often higher than blunt mechanism injuries, but there is a paucity of data on outcomes of ballistic femoral neck fractures (FNFs) that are treated surgically. The aim of the current study was to explore outcomes between surgically treated ballistic FNFs compared to a matched control group of blunt mechanism FNFs.

METHODS:

The trauma registry was queried for patients who were seen at an urban level-I trauma center for a femoral neck fracture between 1/1/2016 and 12/31/2021. After a retrospective chart review, 25 patients were found to have fractures as a result of a gunshot wound. A control-matched group for age, sex, and operative procedure of 25 patients with blunt femoral neck fractures was used for comparison. The primary outcome measure was reoperation of any kind, and secondary measures were avascular necrosis (AVN), nonunion, and conversion to total hip arthroplasty (THA). Pearson chi-square, students t-test, and logistic regression analyses were performed.

RESULTS: Of the 50 patients reviewed, 10 required reoperation, 5 of which were ballistic fractures, and 5 were blunt fractures ($p = 1.00$). Initial management included 34 open reduction internal fixations (ORIF) and 16 closed reductions with internal fixation. Seven of the 10 reoperations were conversion to THA (5 ballistic, 2 blunt)($p = 0.221$). After controlling for confounders, regression analyses revealed that only open reduction had significant odds ratios for reoperation of any kind ($p=0.011$). There was no difference in rates of AVN ($p=0.552$) or nonunion ($p=0.221$) between ballistic and blunt fractures.

DISCUSSION AND CONCLUSION:

The data suggests that individuals who suffer ballistic femoral neck fractures are not at higher risk of requiring reoperation for any reason and have similar rates of complications as their blunt mechanism counterparts. These data are not previously reported in the literature and will help guide surgical decision making and counseling of patients with these injuries. Specifically, surgeons should not be dissuaded from performing ORIF on these ballistic injuries for fear of an exceedingly high reoperation or AVN rate.