

Gunshot Wounds to the Hip: Doomed to Failure?

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Purpose: The purpose of our study is to evaluate the outcomes of hip fractures due to gunshot wounds (GSWs) to the hip treated surgically and their complication rates.

Methods: Patients who sustained a low-velocity GSW to the hip resulting in a fracture to the femoral head/neck and intertrochanteric/peritrochantric region at 3 Level-I trauma centers were eligible for inclusion. Additional inclusion criteria were those fractures were treated with surgical stabilization of the fracture. Data collected include patient demographics, injury and surgical details, additional injuries, and complications. Statistical analysis consisting of the Mann-Whitney U test was used for categorical data and descriptive statistics was used for the clinical data. Significance was set at $P < 0.05$.

Results: There were 69 patients (63 males [91%]), with an average age of 29 years (range, 18-60). 45 patients were smokers (65%), 37 used alcohol (54%) and 41 used drugs (59%). There were 42 31A, 11 31B, and 16 31C-type fractures. 42 patients (61%) had additional GSWs. 15 patients had abdominal GSWs, 8 had chest GSWs, 1 head GSW, with the remaining being orthopaedic GSWs. 46 patients were treated with an intramedullary nail and 23 were treated with open reduction and internal fixation (ORIF) with cannulated screws (8) and/or plates (15). Nine patients had orthopaedic surgical site infections. There was no significant difference found regarding fracture site or type of fixation. Three patients had infections of non-orthopaedic sites. There was a slight difference found in those patients with non-orthopaedic infections and abdominal GSWs ($P = 0.54$). The average length of stay was 9 days (range, 1-62). There were 6 nonunions, 4 patients with hardware failure, 2 cases of avascular necrosis (AVN), 3 patients with posttraumatic arthritis (PTA), and 20 patients with heterotopic ossification (HO). There was no significant difference found regarding fracture site or type of fixation with regard to complications.

Conclusion: This represents the largest study of surgically treated GSWs to the hip. 61% of patients sustained additional GSWs. Orthopedic infections occurred in 13% of patients, with no differences regarding fracture type or fixation. Abdominal GSWs continue to be correlated with those who had infections. HO was the main complication, most likely indicating the significant soft-tissue injury associated with GSWs. These injuries are not benign with infection, and heterotopic ossification is the main complication.