

Does Pelvic Embolization Increase Infection Rates in Patients Who Undergo Open Treatment of Acetabular Fractures?

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Purpose: There is a paucity of literature on the effect of pelvic embolization on postoperative infection rates following open reduction and internal fixation (ORIF) of acetabular fractures. Existing literature would suggest rates are unacceptably high. We sought to evaluate our institution's infection rates after ORIF of acetabular fractures and pelvic embolization.

Methods: This is an IRB-approved retrospective review of prospectively gathered data at a regional Level I trauma center to identify patients who underwent ORIF of acetabular fractures and pelvic angiography from 2005 through 2012. We compared three groups to examine the rates of superficial and deep tissue infection rates between three cohorts: (1) control (controlled for intensive care unit stay and ISS), 35 acetabular patients who did not undergo angiography; (2) angiography (no embolization), 17 acetabular fracture patients who underwent angiography with no identifiable bleeding source; and (3) angiography (embolization), 24 acetabular fracture patients who underwent angiography with an identifiable bleeding source that was selectively embolized.

Results: 74 angiography patients and 35 control patients were identified. 33 angiography patients were excluded: 19 lost to follow-up, 7 for death within the acute hospital stay, and 7 for angiography on the limb contralateral to the acetabular fracture. 41 patients remained for final analysis: 24 patients who underwent embolization and 17 patients who underwent angiography with no embolization. Embolization was performed as follows: 17/24 patients with gel foam, 2/24 with coils, and 5/24 with coils and gel foam. One (4%) deep infection and one (4%) superficial infection occurred in the embolization group. There were 5 (29%) deep infections in the nonembolization group. There was 1 (3%) deep infection in the control group. There was a significantly higher number of deep infections in the nonembolized angiography group.

Conclusion: Despite previous reports of high infection rates after pelvic embolization, we noted a deep infection rate of 4% after embolization and an infection rate of 29% in patients who underwent angiography without embolization. This suggests that pelvic embolization does not lead to higher rates of infection and can be performed safely when indicated. The high rate of infection in the nonembolized group suggests that there may be a component of vasospasm or hypoperfusion secondary to low blood pressure during the initial angiography that led to a missed bleeder that resulted in a hematoma, which was subsequently infected. Further investigation is warranted.