

Does Angioembolization of Pelvic Arterial Bleeding Increase Infection Rate in Patients With an Operatively Treated Pelvis Fracture?

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Purpose: Pelvic fracture-associated arterial bleeding requiring angioembolization is a known clinical scenario. Few studies exist examining the effect of angioembolization on wound complications. We hypothesized pelvic arterial embolization would result in increased rates of postoperative infection.

Methods: The American College of Surgeons Trauma Quality Improvement Program (TQIP) database was used to identify patients with operative pelvic fractures from 2017-2021. The patient cohort was stratified into no angioembolization, angiography without embolization, and angiography with embolization. Our primary outcome was pooled infection rate. Secondary outcomes include superficial surgical site infection, deep surgical site infection, organ space infection, osteomyelitis, and standard TQIP medical complications.

Results: A total of 107,748 patients were identified; 93,865 patients did not undergo angiography or embolization, 5164 underwent angiography alone, and 8719 underwent angiography with embolization. Fewer patients in the no-angioembolization group (1.2%) experienced the primary outcomes than in angiography with (2.7%) or without (2.7%) embolization (P<0.001) (Table 1). Significant differences were also seen for the secondary outcomes (P<0.001). Comparing patients undergoing angiography with and without embolization showed no differences (P>0.05).

Conclusion: Angiography, but not embolization, is associated with an increased rate of postoperative complications. This likely represents overall patient illness rather than a procedural complication.

Table 1: Summary of patients that experienced the outcome measures of interest.

Outcome	No angiography	Angiography	Angioembolization	p-value
Pooled infection	1140 (1.2%)	140 (2.7%)	234 (2.7%)	<0.001
Superficial Infection	372 (0.4%)	38 (0.7%)	65 (0.7%)	<0.001
Deep Infection	520 (0.6%)	63 (1.2%)	102 (1.2%)	<0.001
Osteomyelitis	118 (0.1%)	13 (0.3%)	27 (0.3%)	<0.001
Organ Space Infection	209 (0.2%)	35 (0.7%)	60 (0.7%)	<0.001