

Preperitoneal Pelvic Packing for Acute Hemorrhage Control Is Not Associated with an Increased Risk of Infection After Anterior Pelvic Ring Fixation

Philip F. Stahel, MD; Clay Cothren Burlew, MD; Corey Henderson, MS; Fredric Pieracci, MD; Ernest E. Moore, MD

Denver Health, Denver, Colorado, USA

Purpose: Preperitoneal pelvic packing (PPP) represents a fast and effective measure of acute hemorrhage control in hemodynamically unstable pelvic ring disruptions. The risk of an increased postoperative infection rate after internal pelvic ring fixation subsequent to pelvic packing/depacking remains an area of concern among orthopaedic trauma surgeons. We hypothesized that PPP would not result in an increased surgical site infection rate after anterior pelvic ring fixation.

Methods: A retrospective observational cohort study was performed during a 5-year study time window from January 1, 2011 until December 31, 2015 at an academic Level I trauma center that uses PPP as the standard primary intervention for early bleeding control in hemodynamically unstable pelvic ring disruptions. The primary outcome measure was the rate of surgical site infections after definitive pelvic ring fixation. Secondary outcome measures included other orthopaedic complications and unplanned surgical revisions. This study was approved by the IRB.

Results: A total of 61 patients with hemodynamically unstable pelvic ring disruptions underwent “damage control” external pelvic fixation and PPP for acute hemorrhage control during the 5-year time window. Two patients aged <18 years were excluded. The median ISS in the included 59 patients was 43 (45 ± 12.3 mean \pm SD; range, 20-75). The median time until pelvic depacking was 2 days (1.7 ± 0.7 mean \pm SD; range, 1-3 days). The median time from depacking until definitive internal pelvic ring fixation was 3.5 days (4.9 ± 4.4 mean \pm SD; range, 0-16 days). Two patients had a postoperative surgical site infection after pelvic ring fixation (3.4%) that required surgical debridement, implant removal, and antibiotic management. Seven patients died from their injuries during the initial hospitalization (postinjury mortality rate: 11.9%). Of these, only 1 patient died from acute exsanguination (1.7%). The overall rate of orthopaedic complications requiring a surgical revision was 10.2%.

Conclusion: Pelvic packing and subsequent depacking within 2 days is associated with a low postoperative surgical site infection rate after delayed internal pelvic ring fixation of 3.4%, which is in a similar range of the published historic benchmark of 3% to 21% in the literature on postoperative infections after pelvic ring fixation without pelvic packing. These data support the safety aspect of the PPP protocol for acute bleeding control in hemodynamically unstable pelvic ring injuries.