

**Preperitoneal Pelvic Packing and Thromboembolic Events in Pelvic Ring Disruptions***Julian Wier, BS; Joshua Layne Gary, MD; Joseph Patterson, MD**Keck School of Medicine at the University of Southern California,  
Los Angeles, California, UNITED STATES*

**Purpose:** Patients with traumatic pelvic ring disruption may present with hemodynamic instability secondary to hemorrhage. Preperitoneal pelvic packing (PPP) is suggested as an alternative to angioembolization (AE) for management of hypotension associated with pelvic ring injury refractory to resuscitation and circumferential compression. We hypothesized that PPP may be independently associated with increased risk of venous thromboembolism (VTE) compared to AE in hypotensive patients with pelvic ring disruption.

**Methods:** Adult patients with pelvic ring disruption and hypotension managed with PPP or AE were identified and retrospectively reviewed via the Trauma Quality Improvement Program (TQIP) database from 2015 to 2019. Patients were matched on a propensity score for receiving PPP based on age, smoking status, ISS, Tile B or C pelvic ring disruption, bilateral femur fracture, serious head injury, units of plasma and platelets given within first 4 hours of admission, use of exploratory laparotomy, and Level I trauma center designation of the treating facility. The primary outcome was risk of VTE with adjustment for the propensity score for receiving PPP. Secondary outcomes included rates of deep vein thrombosis (DVT), pulmonary embolism (PE), respiratory failure, inpatient mortality, unplanned reoperation, sepsis, surgical site infection, hospital length of stay (LOS), and ICU LOS.

**Results:** 529 PPP and 2565 AE patients met inclusion criteria. 183 PPP and 183 AE patients remained after propensity score matching, with no significant differences in demographic, injury, or treatment characteristics predictive of study intervention or primary outcome. PPP was associated with a greater absolute risk difference of 9.8% for VTE (15.8% vs 6.0%), 6.5% for clinically relevant DVT (10.9% vs 4.4%), and 4.9% for respiratory failure (7.1% vs 2.2%) compared to AE after propensity score matching. Rates of PE (6.0% vs 2.2%) and inpatient mortality (21.9% vs 14.8%) were higher in the PPP group, however did not meet significance. Treatment was not associated with increased total hospital days, total ICU days, days on respiratory support, or differential rates of all other measured complications.

**Conclusion:** PPP compared with AE for the management of refractory hypotension associated with pelvic ring disruption is associated with higher rates of inpatient venous thromboembolic events and sequelae.