Maternal and Fetal Outcomes After Pelvic Fracture in Gravid Patients

Meghan Wally, PhD*; Tuesday Fisher, MD; Nainisha Chintalapudi, MD; Rebecca Pollack, MBA; Rachel Seymour, PhD; Hassan R. Mir, MD, MBA, FIOTA; Yohan Jang, DO; Greg E. Gaski, MD; Brett D. Crist, MD; Kristoff R. Reid, MD; Patrick F. Bergin, MD; Andrew Chen, MD; Phillip M. Mitchell, MD; Eben A. Carroll, MD; Madhav A. Karunakar, MD; and EMIT*

Purpose: Pelvic fractures in pregnant patients are uncommon, but potentially devastating injuries that have not been sufficiently described. This study describes injury characteristics, treatment methods, and maternal and fetal outcomes among pregnant patients with pelvic ring fractures.

Methods: The medical records for patients who were pregnant at the time of presentation to 10 Level I trauma centers with a fracture of the pelvic ring and/or acetabulum (n = 81) were reviewed. Demographics, concomitant injuries, treatment method, and clinical outcomes for both mother and fetus were abstracted and described.

Results: Of the 81 patients, 53 had a pelvic ring fracture (65%). Another 17 patients had an acetabular fracture (21%), and 9 patients had combined pelvis and acetabular fractures (11%). Median ISS was 21.5 (range, 4-66). Patients' gravid status was evenly distributed by trimester (30% first, 31% second, 36% third). Internal fixation of the pelvic fracture was performed in 51 patients (63%), with the remaining treated nonoperatively. Fetal death occurred in 43% of cases (n = 33 intrauterine fetal demise [IUFD] at time of trauma; n = 1 IUFD <6 weeks from trauma [fracture treated nonoperatively]; n = 1 neonatal death after delivery); 15 babies were delivered prematurely at the time of injury and survived (19%), and the remaining pregnancies continued (n = 31; 38%). The maternal mortality rate was 2.5% (n = 2). One occurred upon presentation to the hospital, and one was an embolic event within 30 days of discharge. Maternal postoperative complications occurred in 9 patients (11%), including infection (n = 3), pulmonary embolism (n = 2), pain (n = 3), and foot drop (n = 1). Fetal death was more prevalent when ISS >17 ($P<0.0001$); premature delivery was more common in third trimester ($P<0.0001$).

Conclusion: Fractures of the pelvis and acetabulum result in high rates of fetal death and premature delivery at the time of injury, associated with injury severity and type of fracture. However, orthopaedic complication rates after surgery are low (11%).