

Examination Under Anesthesia Improves Agreement on Mechanical Stability and Operative Indications Among Experienced Pelvic Surgeons

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Purpose: Identifying mechanical instability is critical when treating pelvic ring injuries. Examination under anesthesia (EUA) is dynamic and may aid in identifying instability compared to static radiographs and CT. The effect of EUA on the assessment of mechanical instability and operative planning is not well defined. The purpose of this study was to determine how EUA affected decision making among experienced pelvic surgeons.

Methods: A survey with 10 OTA/AO 61B (lateral compression) pelvic fractures of varying severity was completed by 11 experienced pelvic surgeons. The patient's demographic information (age, sex, mechanism of injury), plain radiographs, axial CT, and fluoroscopic EUA images were included. The surgeons repeated the survey without EUA images a minimum of 3 months later. Surgeons were asked (1) "is the pelvis mechanically unstable?" and (2) "would you perform surgical treatment of this fracture?" We defined "agreement" as > 80% surgeons providing the same answer. Interviewer reliability was assessed using a Fleiss Kappa statistic. Agreement was characterized as follows: greater than 0.8, excellent correlation; between 0.6 and 0.8, good correlation; between 0.4 and 0.6, moderate correlation; and less than 0.4, poor correlation.

Results: Agreement on the presence of mechanical instability improved from 4 cases (40%; 1 positive, 3 negative) to 8 cases (80%; 4 positive, 4 negative) cases with the addition of EUA. Interviewer reliability was moderate with EUA and poor without EUA (0.592 vs 0.207). Surgeons agreed on operative management in 5 cases (50%; 2 operative, 3 nonoperative) to 6 (60%; 3 operative, 3 nonoperative) cases with the addition of EUA. Interviewer reliability was moderate with EUA and poor without EUA (0.432 vs 0.250).

Conclusion: The addition of an EUA improved agreement on the presence of mechanical instability and the need for operative management among experienced pelvic surgeons.