

The Lateral Anteroposterior Pelvis Stress Radiograph for Occult Instability of Lateral Compression Pelvic Ring Injuries

*Michael Maher, MD; Cyril Mauffrey, MD, MRCS; Joshua A. Parry, MD
Denver Health, Denver, CO, United States*

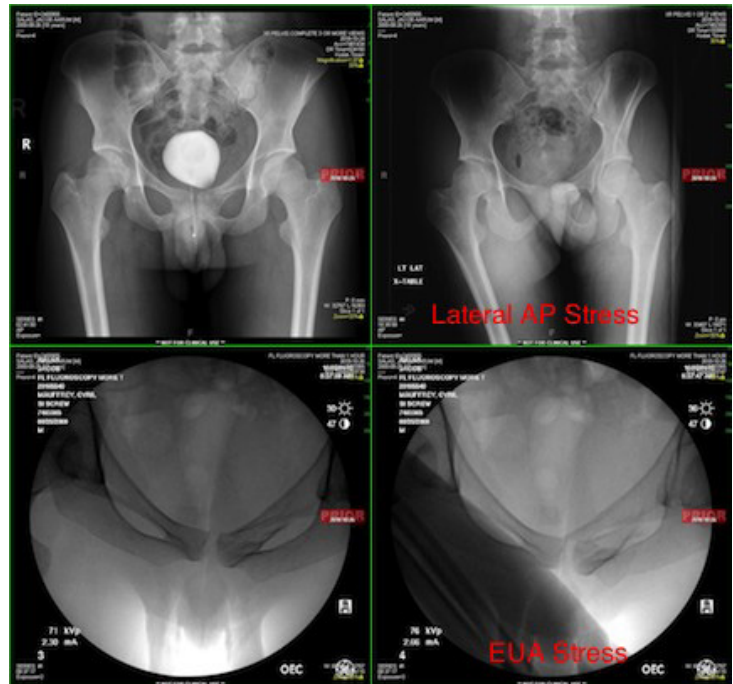
Purpose: Occult instability is prevalent among minimally displaced lateral compression type 1 (LC1) pelvic ring injuries with complete sacral fractures (AO/OTA 61B2.1). The current gold-standard for diagnosis is examination under anesthesia (EUA). However, EUA is burdensome on the patient and is a time-consuming process that negatively affects the operating room schedule. The purpose of this study was to determine if occult instability could be identified on an AP pelvis radiograph in the lateral decubitus position in an awake patient without the need for anesthesia.

Methods: A retrospective review of 18 consecutive patients with unilateral minimally displaced LC1 injuries with complete sacral fractures was performed. All patients received an AP pelvis radiograph in the lateral position, with the injured side down, while awake prior to going to the operating room for EUA. The lateral AP pelvis radiograph was compared to a supine AP pelvis radiograph for evaluation of displacement. Gross displacement (1 cm or more) of the pelvic ring on EUA was considered an indication for operative fixation. The average age was 36 years (range, 17-72 years).

Results: The lateral AP pelvis stress radiograph demonstrated gross instability in 9 (50%) of the 18 patients. All of these patients subsequently had a positive EUA and underwent surgical fixation (Fig. 1). Transsacral transiliac percutaneous screw fixation was performed in all positive cases.

Two patients remained unstable after posterior fixation and underwent anterior fixation. The 8 patients with no displacement on the lateral AP pelvis stress radiograph also had a negative EUA and were managed nonoperatively.

Conclusion: The lateral AP pelvis stress radiograph correctly identified occult instability of lateral compression pelvic ring injuries and correlated with the formal EUA in all cases.



The FDA has stated that it is the responsibility of the physician to determine the FDA clearance status of each drug or medical device he or she wishes to use in clinical practice.