

Use of Ultrasonography for Evaluation of Stability of Lateral Compression Type 1 (LC-1) Pelvic Fractures to Assist Determination of Treatment Strategy**Bin-Fei Zhang; Pengfei Wang, MD; Yan Zhuang***Honghui Hospital, Xi'an Jiaotong University, Xi'an, China, People's Republic of*

Purpose: Lateral compression type 1 (LC-1) pelvic fractures represent a wide spectrum of heterogeneous injuries. These include both stable and unstable patterns; however, determining whether an LC-1 fracture is stable or unstable is a challenge, and the method used to evaluate fracture stability is complicated.

Methods: We prospectively collected and analyzed data from 22 patients with LC-1 pelvic fractures, who underwent ultrasonography and a pelvic compression and separation test, in order to evaluate the role of ultrasonography in determining fracture stability and assist decision-making for treatment strategy.

Results: 22 patients (15 men and 7 women) were included in the study. Following an ultrasound examination, 10 patients were classified into the stable group and 12 into the unstable group. In total, 13 patients received conservative treatment and 9 underwent surgery. At follow-up, there were no differences in fracture healing times or fracture-related complications between the 2 groups. The Majeed score was comparable between the 2 groups and most patients recovered well. There was a moderate degree of consistency in kappa values ($\kappa = 0.571$, $P = 0.01$) between the classification of stability and the final treatment received. In addition, the sensitivity of ultrasonography was 66.67% and the specificity was 76.92%.

Conclusion: In conclusion, ultrasonography is a useful tool for diagnosing the stability of LC-1 pelvic fractures and assists the determination of treatment strategy. Left-right mobility ≥ 0.3 cm may be used as the criterion for determining instability.