Fracture Patterns in Lateral Compression Type-1 Pelvic Fracture Displacement

Operative management is a preferred approach for displaced lateral compression type-1 (LC1) pelvic fractures.

However, the treatment choice for minimally displaced LC1 pelvic ring injuries lacks consensus.

Understanding the influence of fracture patterns on secondary displacement following nonoperative management of LC1 fractures could aid decision-making.

Does Fracture Pattern Really Predict Displacement of LC1 Sacral Fractures?
Livesey et al. (2024) | DOI: 10.2106/JBJS.23.00614

Retrospective analysis from the registry of a level-I trauma center

273 patients treated with nonoperative approaches for:
- A high-energy LC1 pelvic ring fracture
- <5 mm of sacral displacement

Assessment of fracture patterns from computed tomography scans and radiographs
Quantification of absolute and interval pelvic ring displacement

Displacement of pelvic ring injuries 13% (n = 35)

Rate of displacement based on LC1 injury pattern

- Incomplete sacral fracture and bilateral ramus fractures 10%
- Complete sacral fracture and a unilateral ramus fracture 12%
- Complete sacral fracture and bilateral ramus fractures 31%

Magnitude of displacement

- Average interval displacement: 4.2 mm
- Final displacement 9.9 mm ± 4.2 mm

RISK

Low risk
Moderate risk
Higher risk

Fracture patterns could help predict displacement likelihood following the nonsurgical management of minimally displaced LC1 fractures, although the average displacement is relatively small in size.

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