

After a Need for Speed, a Spine Entwined?

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A 28-year-old man is brought to your emergency department via ambulance after a motor vehicle accident. The patient was a restrained driver who was driving too fast, lost control, and ended up in a ditch. His vehicle then rolled over several times. He reportedly self-extricated and was ambulatory at the scene.

His primary complaints include left shoulder, chest wall, and back pain. He denies any significant medical history.

On physical examination, you note a man with normal vital signs who, although slightly anxious, is in no obvious distress. He has moderate tenderness over the left shoulder and sternum and at the thoracolumbar juncture. No step-offs are appreciated. He is able to move all extremities and is neurovascularly intact.

As you await lab results, you obtain a lateral radiograph of the lumbar spine (shown). What is your impression?



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ANSWER

The radiograph demonstrates a comminuted fracture of the superior end plate of L1. There is a loss of height of about 20% to 25%.

Of note, there is a lucency that appears to extend horizontally through the pedicles and into the spinous process. If this observation is accurate, then the patient would have a three-column injury. Such fractures are known as *Chance fractures*, and they are typically unstable and require operative intervention for stabilization.

Chance fractures are better visualized on CT. Subsequent testing confirmed a Chance fracture at the L1 level. The patient was admitted, and neurosurgical evaluation was requested. **CR**

