

# A Unique Case of Nephrolithiasis presenting with Lumbar Compression Fracture



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## Case Details

A 53-year-old female with a history of multiple sclerosis on chronic steroids, hyperlipidemia, migraines, urinary bladder incontinence, and asthma presented to the acute pain clinic with chief complaint of acute low back pain. Her pain started suddenly after falling from standing height while trying to open a window approximately one week prior. The day of her fall, she was evaluated in the emergency department and was found to have an L1 compression deformity. She was treated conservatively with pain medications and referred to the acute pain clinic. On examination in clinic, the patient was in acute distress and diaphoretic. The uncontrolled pain was in her lower back and wrapped around to her abdomen/ groin on the right side worse than the left. She denied severe radicular symptoms or saddle anesthesia, however, she complained of some lower abdominal “fullness” which she believed was different than her baseline. The patient also had tenderness to palpation of the lumbar paraspinal muscles in the low back, midline lumbar tenderness, and right lower extremity weakness. With her current presentation, she was recommended to go to the emergency department for further imaging and work-up. In addition, an MRI of the lumbar spine and a TLSO brace were ordered.

In the emergency department, MRI lumbar spine demonstrated a L1 compression deformity with greater than 50% loss in height. Orthopedic surgery recommended a CT lumbar spine and TLSO brace. CT lumbar spine demonstrated an L1 fracture deformity with 75% decreased height with no significant bony retropulsion (Figure 1). In addition, it was noted the patient had multiple ureteral calculi (largest being 1.2cm) on the right with obstructive hydronephrosis (Figure 2). Urology was consulted, and the patient underwent lithotripsy and cystourethroscopy placing a right urethral stent for her nephrolithiasis. At discharge, the patient was voiding spontaneously, and her pain was well controlled on oral pain medications. It was recommended to continue wearing the TLSO brace with neurosurgery follow up in 2 weeks.

## Imaging



Figure 1: CT Lumbar Spine demonstrating L1 compression fracture. (Sagittal and Coronal View)

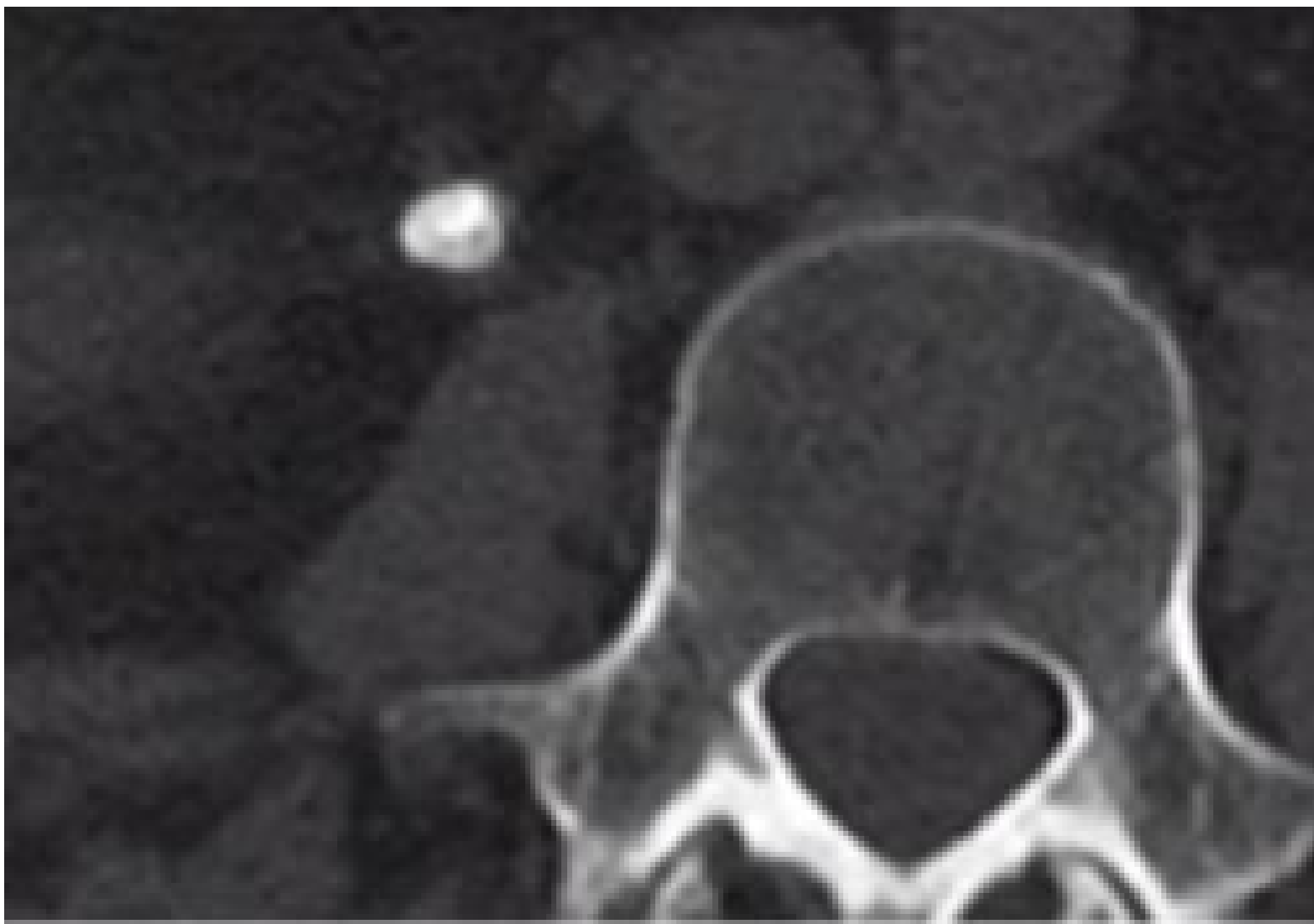


Figure 2: Sagittal CT Lumbar Spine demonstrating right obstructive kidney stone



Figure 2: Coronal CT Lumbar Spine demonstrating right kidney stone

## Discussion/ Conclusion

Most patients with less than four weeks of low back pain do not require imaging. Inappropriate lumbar imaging can lead to irrelevant findings and trigger additional costly studies, unneeded treatments, and unwarranted surgical interventions. When evaluating patients with acute low back pain, multiple “red flag symptoms” have been identified in the literature when considering imaging. Red flag symptoms include bowel/bladder incontinence or retention, saddle anesthesia, progressive leg weakness, current or recent cancer history, signs, symptoms and risk factors for spinal infection, and risk factors for vertebral compression fractures. Systematic reviews have found that the red flags associated with the highest post-test probability of a vertebral fracture are old age, prolonged use of corticosteroids, severe trauma, and presence of contusion or abrasion. For this patient, imaging had already been performed prior to presentation, but her clinical picture (uncontrolled pain, right lower extremity weakness, chronic steroid use, and abdominal fullness) necessitated more explanation and exploration into the source of her acute pain.

## References

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