



Case Report

Acute L1 chalkstick fracture post fall in a patient with known ankylosing spondylitis and previous instrumentation and fusion of T8-L1

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ABSTRACT

Background: Patients with ankylosing spondylitis (AS) are especially prone to sustaining spinal fractures. A 72-year-old male with AS had a previous T10/11 chalkstick fracture requiring a T8-L1 fusion 1 year ago. He subsequently presented with a newly diagnosed acute chalkstick fracture of L1 which was treated without surgery.

Case Description: A 72-year-old male with AS and a T10/11 chalkstick fracture had undergone a T8-L1 thoracolumbar fusion 1 year ago. He newly presented after a fall from his bed with a new acute L1 chalkstick fracture that was successfully managed nonsurgically.

Conclusion: Patients with AS are at high risk for spinal fractures. Here, elderly male, following an original T10/11 chalkstick fracture and a T8-L1 fusion 1 year ago, presented with a new acute L1 chalkstick fracture managed without surgery.

Keywords: Ankylosing spondylitis, Chalkstick fracture, Fall, Lower back pain, Spinal instrumentation and fusion

INTRODUCTION

Ankylosing spondylitis (AS) is one of the spondyloarthropathies. These patients may develop structurally unstable chalkstick (or carrot stick) fractures (i.e., fractures occurring in a brittle spine), which is a poor prognostic finding.^[1] Here, we present a 72-year-old male who, 1 year following a T10/11 chalkstick fracture and T8-L1 fusion, developed a new L1 fracture successfully managed without repeated surgical intervention.

CASE REPORT

A 72-year-old male with a complex medical history [Table 1], including AS, presented 1 year ago with a T10-T11 chalkstick fracture requiring a T8-L1 fusion. He then presented subsequently with another fall with increased low back pain, but without any other neurological deficit, and a new L1 chalkstick fracture.

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Radiological studies

Lumbar X-rays showed AS, a loss of height of T10 vertebral body, and new T12-L1 anterior syndesmophyte disruption [Figures 1 and 2]. The thoracic CT showed an acute chalkstick fracture of L1 extending posteriorly to the left L1 pedicle adjacent to the transpedicular screw and extending through to the calcified

posterior interspinous ligament [Figure 3]. The previous T8-L1 posterior transpedicular screws fixation demonstrated no new pathology and/or periprosthetic loosening.

Management

As the patient had no new neurological deficit, he was managed nonsurgically; rather, analgesia was optimized. Notably, due to his severe dementia, he was unable to tolerate a thoracic lumbar sacral orthosis. One month later, the patient’s neurological examination and X-rays remained unchanged [Figures 4 and 5].

DISCUSSION

As patients living with AS are up to 4 times more likely to sustain spinal fractures, they should undergo definitive diagnostic radiographic studies early in their clinical courses to determine appropriate treatment. Here, a 72-year-old male presented with a second L1 chalkstick fracture 1 year

Table 1: Past medical history

Medical history

- Known AS: HLA-B27 was tested positive with associated uveitis
- Dementia
- Frequent falls
 - Complicated by subdural hemorrhage, status post burr-hole drainage
- Folate deficiency anemia
- Latent tuberculosis
- Previous hepatitis B infection

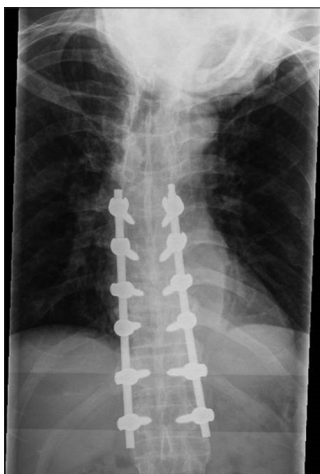


Figure 1: XR T/L spine AP.

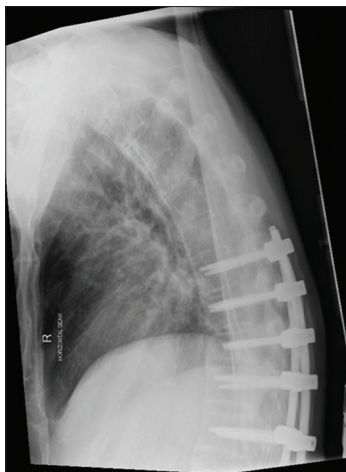


Figure 2: XR T/L spine Lateral.

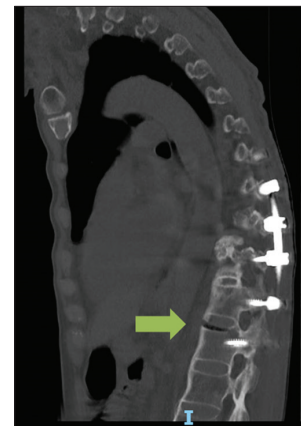


Figure 3: Thoracic CT for operative planning.



Figure 4: XR T/L spine AP 1 month post discharge.

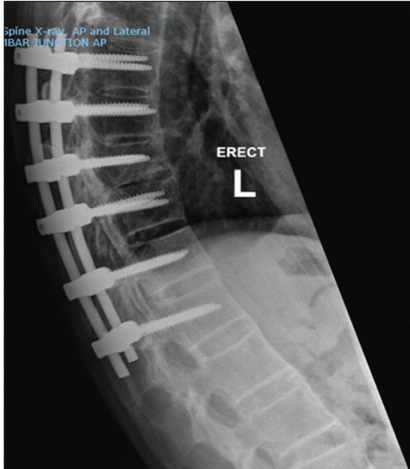


Figure 5: XR T/L spine Lateral 1 month post discharge.

following the previous T10/11 chalkstick fracture and T8/L1 fusion. This time, without any neurological deficits, it was elected to treat him nonsurgically. Notably, a systematic review involving 76 Medline and EMBASE articles (345 AS patients) revealed no significant differences in mortality rates <3 months after presentation with AS-related chalkstick fractures (4.9% with surgery vs. 7.3% without surgery).^[2]

CONCLUSION

Patients with AS have an increased susceptibility to spinal fractures. Here, a 72-year-old male, 1 year following a T10/11

chalkstick fracture warranting a T8-L1 fusion, presented with a new L1 chalkstick fracture that was successfully managed nonsurgically.

Declaration of patient consent

Patient's consent not required as patients identity is not disclosed or compromised.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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