

Spontaneous Spinal Epidural Hematoma Following Heavy Weightlifting: A Case Report

Karan Arul, M.D., Peter Scriven, D.O., Lok Valentas, M.D., Stephen Anderson, M.D.
The Ohio State University Wexner Medical Center

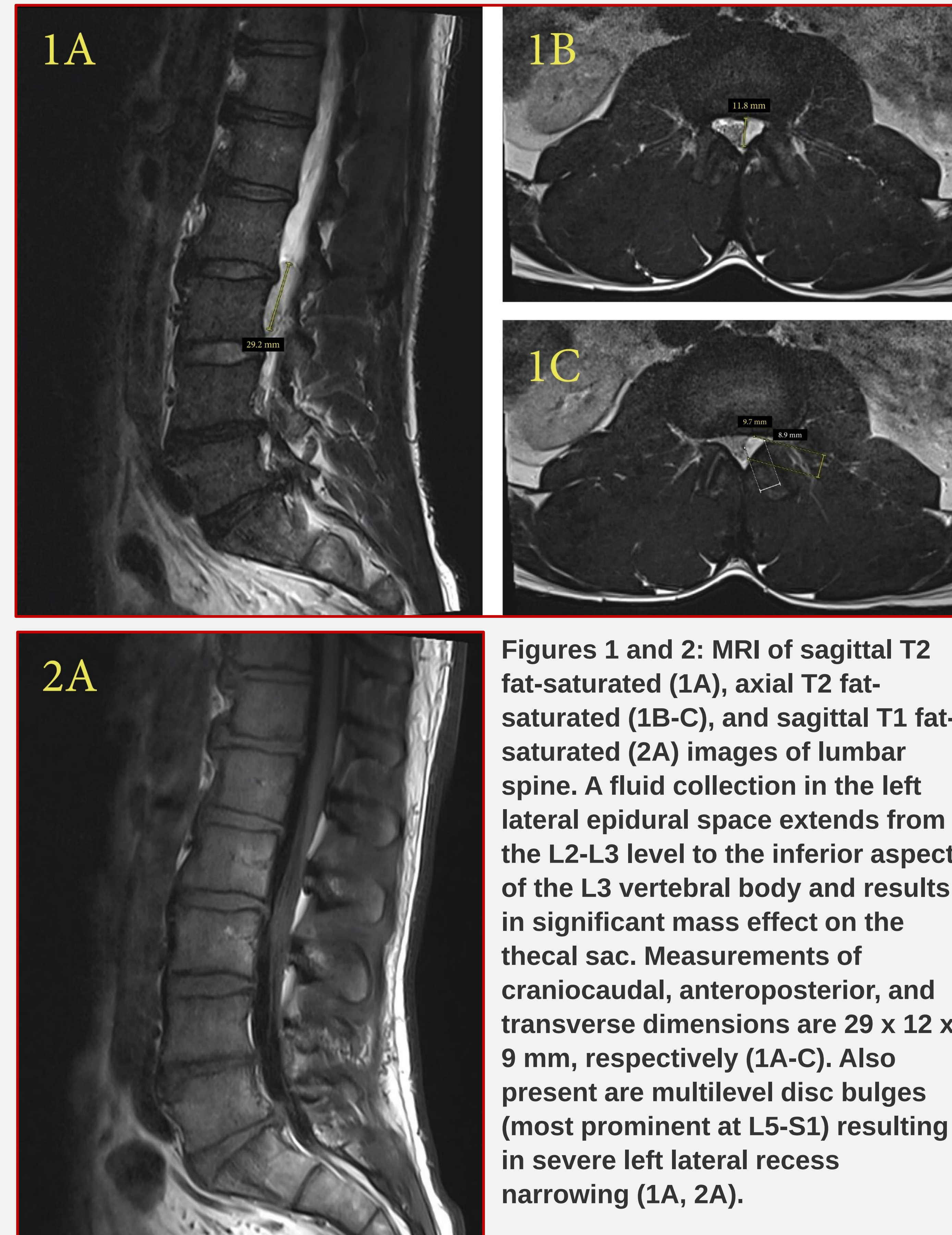
Introduction

- Spontaneous spinal epidural hematoma (SSEH) refers to extradural hemorrhage without a known precipitating cause such as trauma, tumor, or vascular malformation. The incidence of SSEH has been estimated at 0.1 in 100,000 individuals per year.
- SSEH acutely presents as severe neck or back pain with dermatomal radiation to the extremities. It may cause sensory changes, paresis, and bowel or bladder dysfunction if the spinal cord or cauda equina is compressed.
- Valsalva maneuvers during weightlifting increase intraabdominal and intrathoracic pressures which are ultimately transferred to the spinal epidural venous system. This increase in pressure has been attributed to rupture and hemorrhage of the epidural venous vessels resulting in SSEH.

Case Description

- A 48-year-old male presented with 2-week history of left low back pain radiating to the left anteromedial thigh and weakness of left hip flexion. He reported percentage of axial to extremity pain as 25% to 75%.
- He was performing a heavy weighted exercise of over 320 lbs (known as a seated good morning) at time of symptom onset.
- Examination remarkable for positive seated left straight leg raise and left slump tests.
- MRI L-Spine showed a fluid collection in the left lateral epidural space likely representing an epidural hematoma and resulting in severe canal stenosis at the level of L2-L3 (Fig. 1).
- MRI L-Spine also demonstrated diffuse disc bulges at L2-L3 and L5-S1 with extrusion displacing the S1 nerve root (Figs. 1&2).

MRI Lumbar Spine



Figures 1 and 2: MRI of sagittal T2 fat-saturated (1A), axial T2 fat-saturated (1B-C), and sagittal T1 fat-saturated (2A) images of lumbar spine. A fluid collection in the left lateral epidural space extends from the L2-L3 level to the inferior aspect of the L3 vertebral body and results in significant mass effect on the thecal sac. Measurements of craniocaudal, anteroposterior, and transverse dimensions are 29 x 12 x 9 mm, respectively (1A-C). Also present are multilevel disc bulges (most prominent at L5-S1) resulting in severe left lateral recess narrowing (1A, 2A).

Discussion

- SSEH patients with minimal neurological impairment and rapid symptom improvement can be treated conservatively and monitored with serial MRIs.
- SSEH patients with acute onset of progressive “red flag” symptoms are typically treated with decompressive laminectomy, hematoma evacuation, and pathological specimen evaluation to rule out malformation or neoplasm.
- MRI is the diagnostic study of choice for spinal epidural hematoma. MRI can characterize age and extent of bleed, in addition to degree of cord compression.
- Acute epidural hematoma (1-3 days old) will appear isointense on T1-weighted images and hypointense on T2-weighted images. Subacute hematoma (3-14 days) will appear hyperintense on T1 and hypointense on T2. Chronic hematoma (>14 days) will demonstrate a “mosaic pattern” – darker peripherally (hypointense of T1 and T2) and brighter centrally (isointense on T1 and hyperintense on T2).

Conclusions

- Although spontaneous spinal epidural hematoma is typically treated with surgery, reabsorption of hematoma and clinical recovery have been reported in patients with minimal neurological impairment and rapid symptom improvement.
- In addition to determining age and extent of hematoma, MRI can assist with routine monitoring of patients who are treated conservatively with an early, individualized rehabilitation program.

References

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