

Pigmented villonodular synovitis in the thoracic spine: a rare and under-recognized condition

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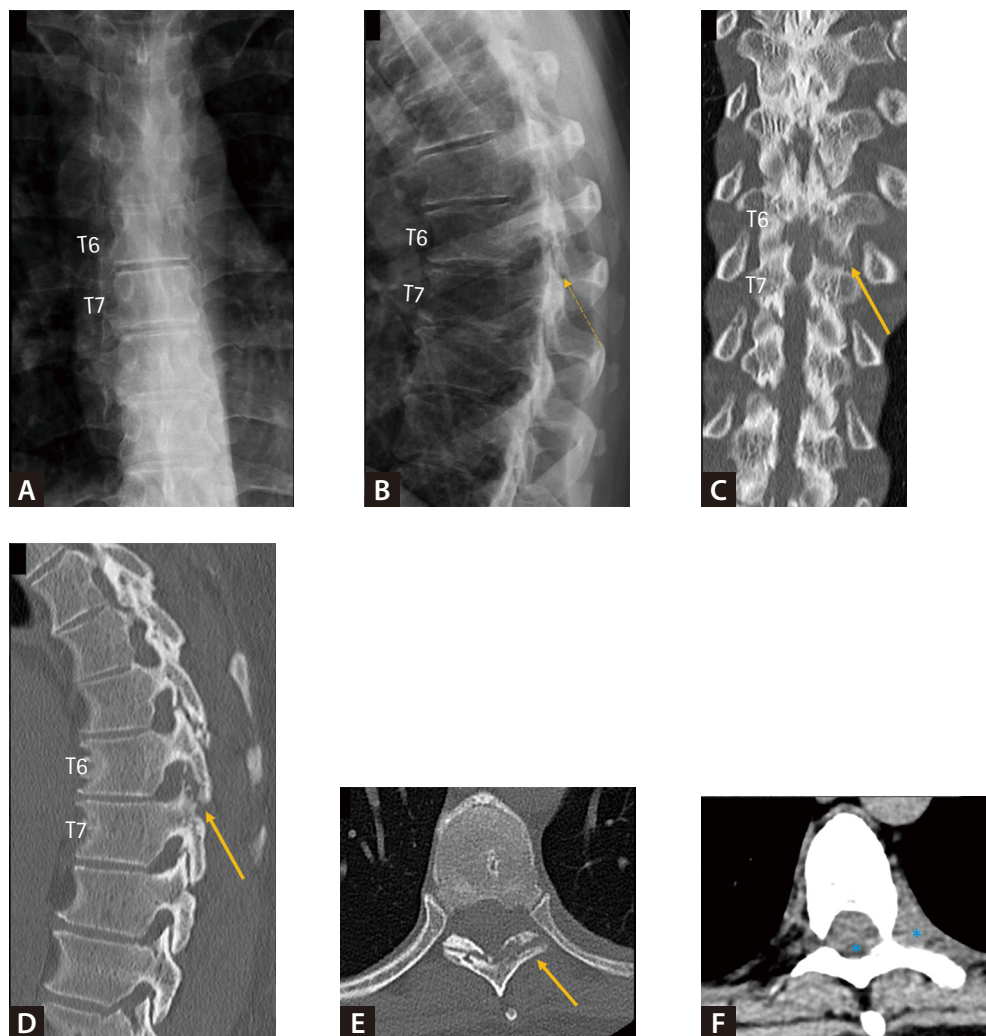


Figure 1. Thoracic spine radiography on anteroposterior (A) and lateral (B) views and computed tomography (CT) on coronal (C), sagittal (D), and axial (E, F) planes. Left T6-7 facet arthropathy (orange arrows) with bony erosive changes and pseudo-enlargement of the joint space, findings better appreciated on CT. On the soft tissue window (F), there was also fat stranding of the posterior epidural space and left paravertebral region (blue asterisks) at the same level.

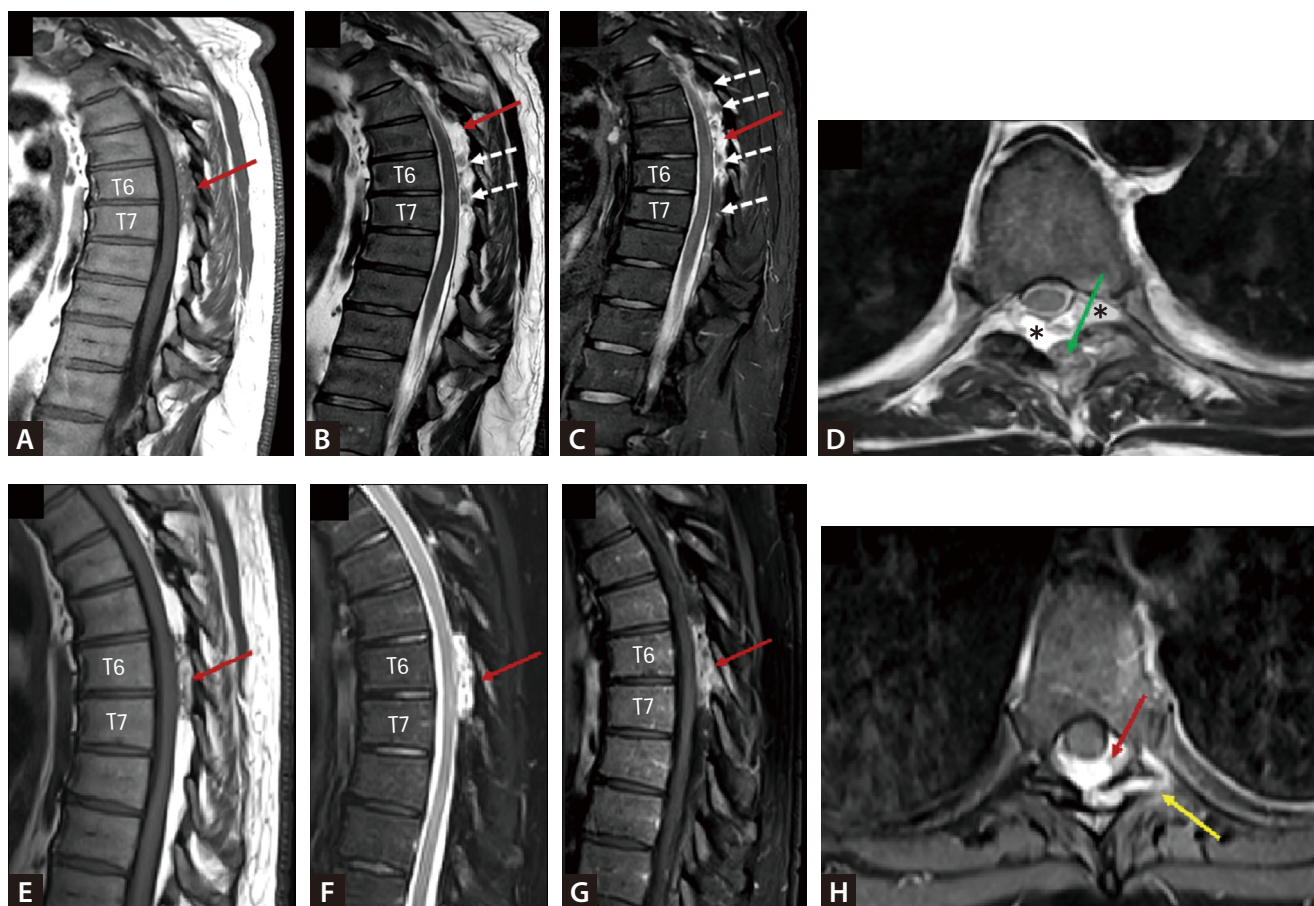


Figure 2. Thoracic spine magnetic resonance imaging – sagittal T1 (A), sagittal T2 (B), sagittal T2 short tau inversion recovery (STIR) (C), axial T2 (D) and 3-month follow-up sagittal T1 (E), sagittal T2 STIR (F), sagittal T1 fat suppressed post gadolinium (G), and axial T1 fat suppressed post gadolinium (H). Extensive bony and soft tissues edematous changes (red arrows) surrounding the left T6-7 facets, including the posterior T6-7 vertebrae bodies, posterior elements/spinous process (green arrow) and posterior epidural space (asterisks). There were scattered T2/STIR high signal foci (dashed white arrows) within this process, in keeping with hemosiderin deposition from chronic microbleeds. There was only mild effacement of the mid thoracic spinal cord, with no intramedullary signal changes. 3-month follow-up under symptomatic treatment showing significant improvement, with residual enhancing tissue at the posterior T6-7 posterior epidural space (red arrows) and corresponding left facets (yellow arrows).

A 51-year-old male presented with mid-thoracic back pain and bilateral leg weakness. He sought evaluation following a workplace injury that occurred three months earlier. Initially, the patient reported worsening mid-back pain and difficulty walking. About two weeks after the accident, he developed new-onset leg weakness, which was initially attributed to gabapentin prescribed for his pain. However, discontinuation of the medication did not alleviate the gait issues. Upon evaluation, the physical exam revealed diminished reflexes in the bilateral biceps, triceps, brachioradialis, as well as left-sided quadriceps and hamstrings. Decreased strength was also noted in both the quadriceps and tibial muscles bilaterally.

Computed tomography (Fig. 1) and magnetic resonance

imaging (MRI) (Fig. 2) demonstrated a left T6-T7 facet arthropathy with inflammatory changes compatible with pigmented villonodular synovitis (PVNS) of the spine. The neurosurgery team continued symptomatic treatment and decided not to perform a biopsy, given the significant clinical and imaging improvement observed at the 3-month follow-up. Notably, the patient exhibited substantial resolution of the inflammatory process, achieving a highly favorable outcome without surgical intervention.

This case of PVNS in the thoracic spine is notable due to its rare location, as PVNS typically affects peripheral joints [1]. It underscores the importance of considering PVNS in patients with atypical back pain and neurological symptoms. Delayed leg weakness, initially attributed to medication, high-

lights diagnostic complexity. MRI was crucial for diagnosis, revealing features like synovial hyperplasia and hemosiderin deposits, which helped differentiate PVNS from other conditions [2]. Although exceedingly rare, PVNS has been reported affecting the facet joints of the spine – until 2014, 63 cases were reported [3]. Uniquely, the patient was managed conservatively, with significant improvement observed without surgical intervention. This case demonstrates that non-surgical management may be a viable option in select PVNS cases, emphasizing the importance of individualized care and careful monitoring.

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Received : September 14, 2024

Revised : October 24, 2024

Accepted : November 19, 2025

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Conflicts of interest

The authors disclose no conflicts.

Funding

None