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Solitary Plasmacytoma of the Spine: An Unusual Presentation

Solitary plasmacytoma of bone (SBP) is a rare hematologic malignancy, which occurs with radiologic evidence of a solitary lesion in the absence of significant bone marrow plasma cell infiltration (<5%–10%), leading to absent (or low) serum and urine levels of monoclonal protein.¹ This isolated lesion is most commonly found in the spine, without evidence of multiple myeloma elsewhere.^{2–4} Our letter will present a biopsy-proved thoracolumbar SBP with extensive involvement of the soft tissues.

A 41-year-old woman presented with back pain, paraparesis, and hyporeflexia of the lower limbs. Spine CT revealed osteolytic areas from T12 to L2 with vertebrae and disk-space destruction, extension to the posterior elements (Fig 1A), and a perivertebral mass (Fig 1B). MR imaging showed extension of the lesion to the spinal canal, with an important mildly enhancing epidural mass and compression of the cord. CT-guided bone marrow vertebral biopsy was consistent with plasmacytoma. Laboratory tests confirmed this diagnosis.

SBP most commonly affects the axial skeleton (25%–60%) and has a predilection for the thoracic spine.^{1,4} It can present for many years as an isolated lesion, but on occasion, multiple plasmacytomas can develop; therefore, an association with multiple myeloma is described.⁴ However, involvement of adjacent bone and tissue sites by direct extension does not constitute evidence of multiple myeloma. SBP of the spine is predominantly lytic; typically involves the vertebral body and the posterior elements with compression of the cord; but, on occasion, may present as an expansile lesion with a soft-tissue

mass, fractures, or, rarely, osteosclerosis.^{2–4} Its MR imaging signal intensity is not specific (low on T1-weighted images and high on T2-weighted or short tau inversion recovery images). The “mini-brain” sign is the only pathognomonic finding.² CT and MR imaging findings can be very helpful in a patient with plasma cell dyscrasia and should be kept in mind, even though biopsy is usually required. To our knowledge, the imaging findings of such an unusual presentation of SBP have not been previously described.

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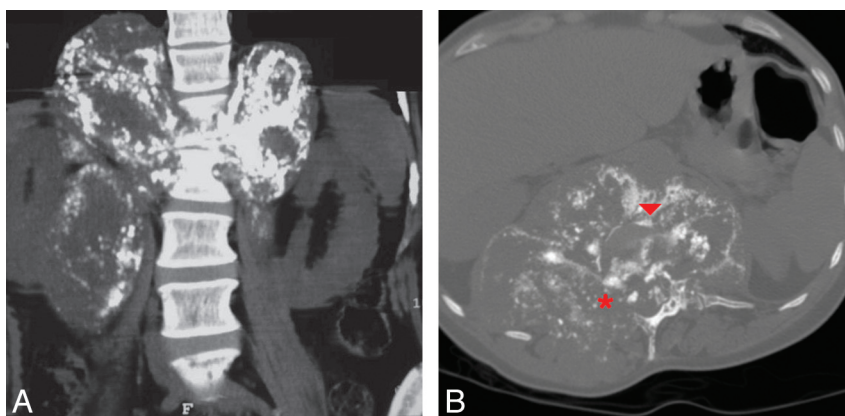


Fig 1. A, Coronal nonenhanced CT image through the lumbosacral spine (soft-tissue windows) shows bone destruction (from T12 to L2), most severe at L1 and the adjacent disk space (L1-L2), and a 17 × 15 cm calcified paravertebral soft-tissue mass, involving almost the entire right psoas and the upper third of the left psoas muscle, extending up to the diaphragm and displacing the right kidney laterally. B, Axial CT image (bone windows) reveals complete destruction of the L1 vertebra with ill-defined osteolytic areas (arrowhead) and involvement of the posterior arch and pedicles (asterisk).