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“A Hemorrhagic Lumbar Synovial Cyst Mimicking Spinal Infection: Acute Complete Foot Drop After Minor Trauma with Full Recovery Following Decompression and Fusion”

Abstract

Background: Lumbar synovial cysts are uncommon degenerative lesions that typically present with chronic radiculopathy or neurogenic claudication. Acute presentation is rare but may occur following hemorrhagic transformation in the setting of trauma, potentially resulting in acute neurological deficits.

Observations: A 43-year-old woman presented with acute onset of complete right foot drop following a mechanical fall. Imaging demonstrated an L4–5 synovial cyst with severe canal stenosis and extensive enhancement throughout the L4-5 facet joint spaces and epidural space, initially raising concern for spinal infection. She underwent urgent decompression, cyst excision, and transforaminal lumbar interbody fusion (TLIF). Intraoperatively, the cyst contained organized hematoma and synovial fluid consistent with hemorrhagic degeneration. The patient experienced rapid postoperative improvement, with complete resolution of foot drop by two weeks that was maintained through six-month follow-up.

Lessons: Hemorrhagic lumbar synovial cysts should be considered in patients with acute neurologic deficit, particularly following minor trauma, even in relatively younger patients. Imaging findings may mimic spinal infection and contribute to diagnostic uncertainty. Early surgical intervention can result in excellent neurologic recovery. In addition to decompression, fusion should be considered in the presence of instability or when extensive facetectomy is required.