Lumbar Synovial Cyst: An Unusual Cause Of Acute Cauda Equina Syndrome

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Abstract

Introduction: Cauda equina syndrome is a well described state of neurologic compromise due to lumbosacral root compression. It is most often caused by mass effect from a herniated disc, tumor, infection, diverticulum, or hematoma. We report a case of rapid lumbosacral synovial cyst expansion leading to acute cauda equina syndrome.

Case

A 49 year old female with a history of chronic non-radiating back pain primarily attributed to L4-5 facet degenerative arthritis presented with new onset saddle anesthesia, bladder incontinence, and lower limb pain as well as paresthesia. Neurologic exam revealed positive straight leg sign bilaterally, bilateral peroneal and tibial weakness, bilateral extensor weakness, right greater than left, bilateral sensory loss, diminished rectal tone, and decreased ankle reflexes. Lumbar MRI was obtained and compared to a study from 2 weeks earlier. It demonstrated new minimal synovial cyst formation at the L4-5 level due to a dorsal epidural cyst contiguous with the right L4-5 facet. After an unsuccessful attempt to relieve her symptoms with CT guided cyst aspiration, an L4-5 posterior spinal decompression with excision of the synovial cyst was performed.

Results

Following the patient's perineal numbness, bladder incontinence, and associated pain resolved. The only residual symptom at one month follow up was continued numbness in the right lower limb in a L5 distribution.

Conclusions

A lumbar synovial cyst is a rare but possible cause for acute cauda equina syndrome. Workup associated with this condition can be minimized through prompt recognition and treatment of cauda equina syndrome.

Figures

Figure 1. Repeat T2-weighted lumbar MRI. (A) Sagittal view—suspicious isointense cyst appreciated along the dorsal epidural space at the L4-5 level. (B) Axial view—increased fluid in the right L4-5 facet with subcortical signal intensity with dorsal epidural space via a defect in the ligamentum flavum.

Discussion

This case report describes a patient who developed cauda equina syndrome due to rapid expansion of a lumbar synovial cyst (LSC). Over the years LSCs have become increasingly recognized as an uncommon cause of back pain and lumbosacral neurologic deficits. Synovial cysts can occur in cervical and thoracic segments but are most commonly found in the lumbar spine. The prevalence of LSCs is highest in the fourth decade and a slight female predominance is reported. As the case with our patient, LSCs most frequently occur at the L4-5 level. LSCs are thought to be caused by protrusion and expansion of the synovial membrane from degenerative facet joints due to segmental instability or trauma. Patients with symptomatic LSCs typically present with sciatica or radiculopathy; however, cauda equina syndrome may develop in new cases. MRI is the investigation of choice for diagnosis and characterization of LSCs. Our case showed an isointense cyst with well documented rapid expansion over a 2 week period. It was difficult to appreciate a distinct connecting tissue to the subdural space on MRI, but this connection was confirmed with CT guided aspiration. Although treatment for LSCs may include both non-surgical and surgical approaches, the latter results in higher resolution of neurologic deficits in patients presenting with acute cauda equina syndrome.

References


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