



Through the Scope: Endoscopic Technique for Hemorrhagic Cyst Excision and Lumbar Decompression

Jack Johnson, OMS-I¹ & Andrew Chung, DO²

Arizona College of Osteopathic Medicine¹, Banner Health Department of Orthopedic Surgery & Assistant Clinical Professor of Orthopedic Surgery University of Arizona²



Introduction

- Lumbar facet cysts (LFCs) are an uncommon cause of low back and radicular pain that arise from the synovial membrane of facet joints.
- Hemorrhagic LFCs are even more rare and may present with acute onset of neurologic symptoms.
- Osteopathic manipulative techniques aimed at addressing spinal somatic dysfunction have demonstrated benefit in alleviating radicular symptoms.¹ However, in patients with failed conservative management or neurologic decline, surgical intervention remains the standard of care.²
- Optimal surgical technique remains debated due to the rarity of hemorrhagic LFCs and limited available literature.
- Emerging minimally invasive surgical (MIS) approaches allow for cyst excision and decompression with outcomes comparable to open procedures while potentially reducing length of stay, cost, operative time, and avoiding larger fusion procedures.³

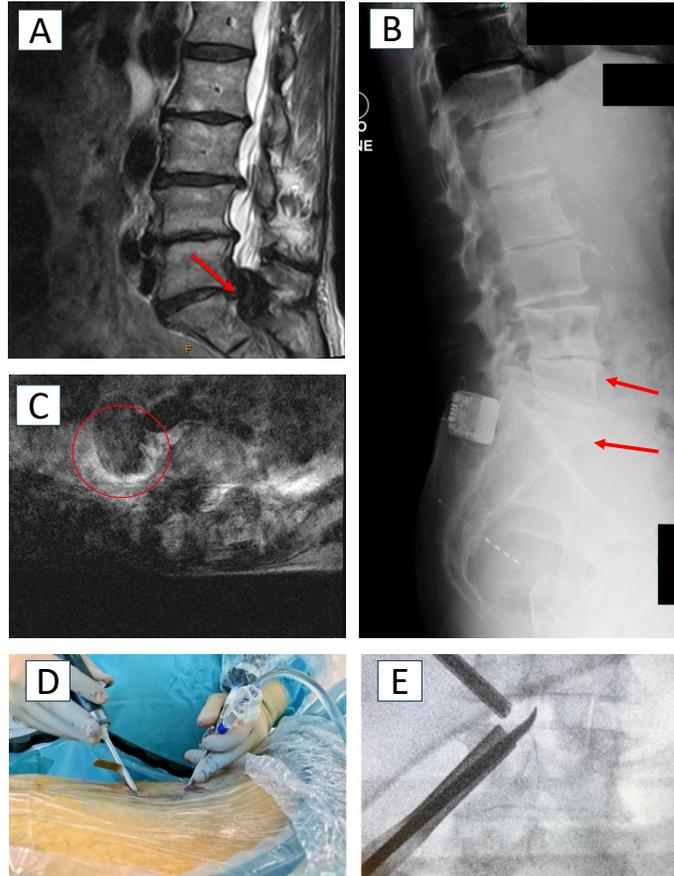
Objectives

- Describe the presentation, surgical management, and outcome of a patient with a hemorrhagic LCF causing severe radiculopathy and neurogenic claudication treated with MIS endoscopic excision and decompression.

Case Presentation

- A 73-year-old woman with chronic back pain and a 1-year history of persistent right-sided S1 radiculopathy and neurogenic claudication presented with acute worsening of symptoms.
- Patient reported severe buttock pain with ambulation, right lower extremity paresthesia, urinary incontinence, multiple ground-level falls, inability to ambulate without assistive devices due to worsening claudication.
- Physical exam revealed full strength in L2–S1 myotomes, except for complete loss of motor function in the right S1 distribution (0/5) and paresthesia in the right S1 dermatome.
- Due to her acute decline, the patient underwent a biportal endoscopic lumbar decompression at L5-S1 and a large hemorrhagic LFC was excised without complication.
- The patient experienced immediate relief of her radicular symptoms and claudication and by 3 months post-op she noted sustained relief and ability ambulate independently.

Results



Images

- A. Magnetic resonance image of lumbar facet cyst compressing right S1 nerve
- B. Lateral lumbar radiograph with large right-sided hemorrhagic lumbar facet cyst
- C. Magnetic resonance image showing compression at L4-L5 and L5-S1 levels
- D. External view of working and visual port
- E. Internal view of working and visual port

Discussion

- LFC's and hemorrhagic LFC's are an uncommon etiology of low back pain and radiculopathy arising from the synovial membrane of the facet joint. Hemorrhagic transformation of these cysts is less common and such lesions may cause abrupt neurologic decline due to rapid expansion and nerve root compression. Clinical manifestations may include neurogenic claudication, radiculopathy, and in severe cases, cauda equina syndrome.
- In this case, an endoscopic lumbar decompression via biportal approach at L5-S1 with excision of a large hemorrhagic LFC was performed without complication.
- The traditional approach to endoscopic decompression uses a single port which doubles as a visual port and working port. This procedure was completed with the use of two ports: one working port and one visual port.
- This case demonstrates that hemorrhagic LFCs can be safely and effectively treated using a biportal endoscopic lumbar decompression without fusion. Minimally invasive techniques may provide effective decompression while potentially reducing surgical morbidity, LOS, and improved outcomes. Moreover, this case's use of a biportal endoscopic approach demonstrates the efficacy of this emerging technique in spine surgery.
- With the rapidly evolving procedural and technologic advances in spine surgery and variations in institutional preference, there's a need to standardize operative MIS protocols for patients with lumbar facet cysts.

Conclusion

- Hemorrhagic lumbar facet cysts, though rare, can lead to acute neurologic decline and significant functional impairment. Endoscopic lumbar decompression with cyst excision represents a safe and effective surgical option, providing immediate and sustained symptom relief without the need for fusion in appropriately selected patients.

Acknowledgements

- The authors thank **Dr. Ashurst** for his thoughtful review and academic guidance in the preparation of this case. We also acknowledge the **MIRAGE Lab** for their support and contributions to this project.

References

