

Lumbar facet joint synovial cysts causing spinal stenosis- a case series

RADIOLOGY
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Introduction

- Spinal stenosis is a common source of pain that results from degeneration of the spinal column and its underlying structural components (1).
- Some cases are caused by wear and tear of a facet joint capsule leading to a leakage of synovial fluid into the spinal canal or exiting foramina, forming a synovial cyst (2,3).
- Magnetic resonance imaging (MRI) is the best imaging modality to identify these synovial cysts and helps guide early management (2,4).

Objective

- To illustrate the use of percutaneous CT-guided lumbar facet joint synovial cyst (LFSC) rupture in a case of neurogenic and vascular claudication and another case with only neurogenic claudication.
- We present two cases of spinal stenosis due to LFSC.
- Case 1 presents with dual neurogenic and vascular claudication.
- Case 2 presents with only neurogenic claudication.

Case Presentation 1

- A 58-year-old male presented with persistent right paralumbar pain, radiating down to bilateral gluteal region, posterior thighs and calves.
- Paralumbar pain was relieved on forward flexion
- Calves pain was relieved by rest but recurred on mobilising 50m.
- Past medical history: Previous coronary angioplasty of dominant circumflex artery which had diffusely severe stenosis.
- Cardiovascular risk factors: long-term smoker, high alcohol intake, dyslipidemia.
- Physical examination revealed complete absence of lower limb (LL) pulses.
- Underwent MRI spine and CT angiogram LL.

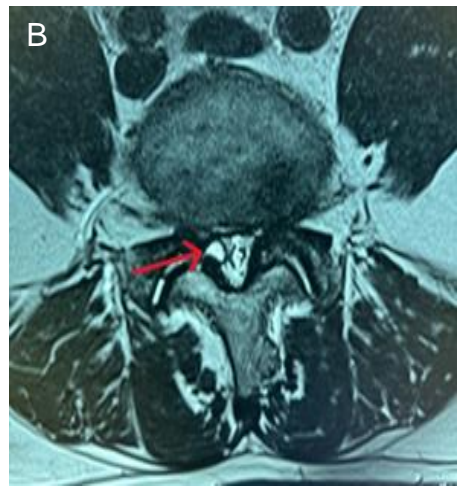


Figure 1: T2- weighted MRI: multilevel lumbar spondylosis and a LFSC measuring 4.1 x 4.3 x 6.5 mm (red arrow) at L4/L5 right facet joint causing severe spinal canal stenosis and exit foraminal stenosis. (A: sagittal scan of lumbosacral region. B: axial scan at L4/L5 level)

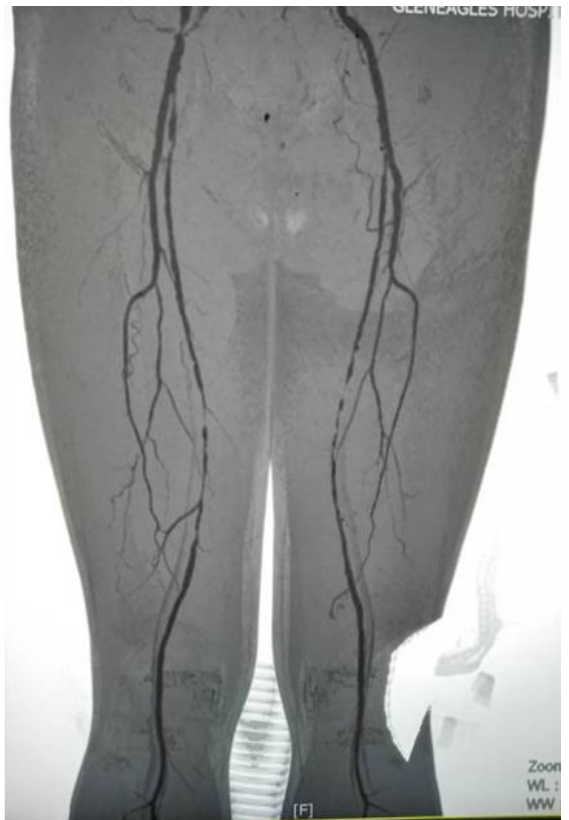


Figure 2: CT angiogram LL : multiple severe stenosis in the abdominal aorta, bilateral iliac and common femoral arteries extending to the upper popliteal arteries.

Case Presentation 2

- 54-year-old male presented with lateral right knee joint pain radiating down the ipsilateral calf, associated with weakness.
- Pain triggered by ambulation and relieved by rest.
- Normal neurological and peripheral pulses examination.
- X-ray of Right knee was normal.
- Underwent MRI spine.

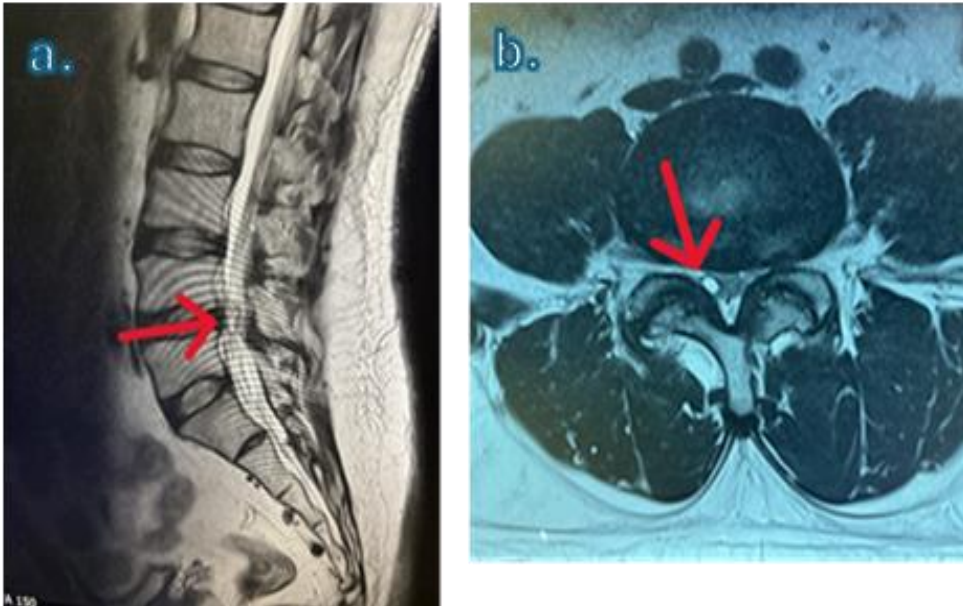


Figure 3: T2-weighted MRI: multilevel lumbar spondylosis most marked at L4/5 and a 4.4 x 3.3 x 15.5 mm LFSC (red arrow) arising from the anteromedial facet joint impinging upon the right L5 nerve root. (A: sagittal view. B: axial view demonstrating LFSC at L4/L5 level.)

Management

- Both cases underwent successful percutaneous CT-guided LFSC rupture followed by epidural block (Dexamethasone 8mg and Lignocaine 1 mL) with immediate resolution of symptoms 10-15 minutes post-treatment.
- Case 1 subsequently underwent successful balloon angioplasty to the stenosed lower limb arteries at a later date.
- At 3 month follow-up, both cases remained symptom-free.

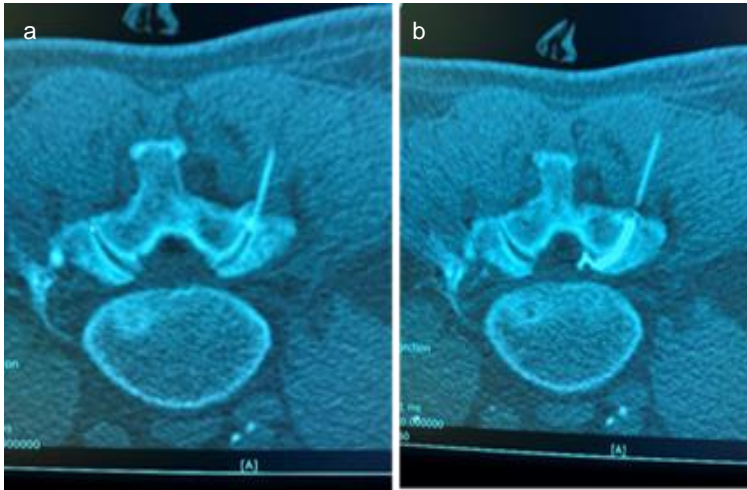


Figure 4: Case 1. CT-guided 25G needle is advanced into the right facet joint at L4/L5 (a) and contrast dye is injected until cyst rupture occurs (b).

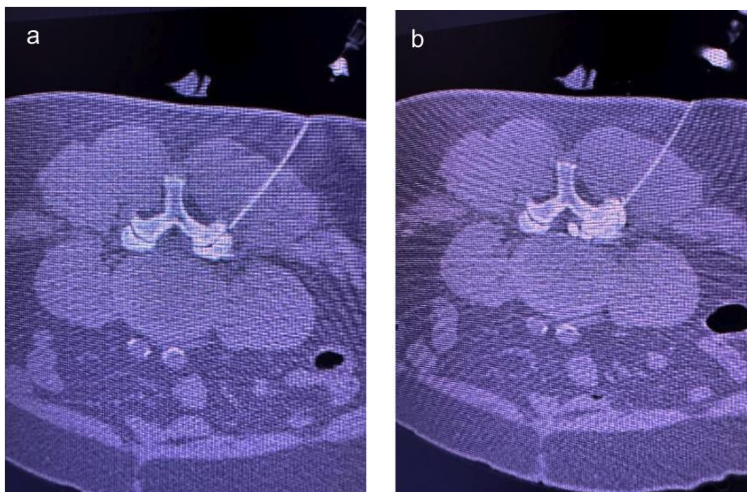


Figure 5: Case 2. CT-guided 25G needle is advanced into the right facet joint at L4/L5 (a) and contrast dye is injected until cyst rupture occurs (b).

Conclusion

- While it is easy to identify causes of neurogenic claudication using high resolution imaging techniques, there is sometimes an overlap with vascular claudication where symptoms presented are hard to distinguish the former from the latter.
- Hence, careful history-taking and physical examination of the patient is critical to identifying the underlying aetiology.
- Compression of LFSC on surrounding neural structures can lead to radiculopathy or neurogenic claudication.
- Management of LFSC depends on the cyst's size, location and severity of symptoms.
- Management ranges from conservative observation, injections, percutaneous cyst rupture and surgical excision (5).
- Percutaneous CT-guided LFSC rupture are inexpensive, minimally invasive, quick (taking <20 minutes) and boasts a high success rate of symptom resolution with minimal side effects.
- It should be considered before surgical intervention (6).

References

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