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Case Report

# A Piriformis Syndrome Diagnosed with Prolapsed Lumbar Intervertebral Disc: A Case Report

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## Abstract

***Background:*** *Piriformis syndrome (PS) is an entrapment neuropathy due to irritation or compression of the sciatic nerve by the piriformis muscle. Its presentation frequently mimics Prolapsed Lumbar Intervertebral Disc (PLID) and may coexist with it, complicating diagnosis.* ***Case:*** *We report a 30-year-old male with buttock-predominant sciatica persisting after PLID directed Epidural injection. Clinical examination (positive Freiberg, FAIR) and imaging supported Piriformis Syndrome. Ultrasound-guided piriformis injection using 2 mL of 1% lidocaine plus a structured rehabilitation protocol produced rapid and sustained pain reduction (VAS 8→2 at 3 months).* ***Conclusion:*** *In patients with ongoing sciatica despite appropriate PLID management, targeted evaluation for PS is warranted. Ultrasound-guided injection combined with rehabilitation is effective for both diagnosis and treatment.*

***Keywords:*** *piriformis syndrome; lumbar disc herniation; sciatica; ultrasound-guided injection; steroid injection; rehabilitation*

**Introduction:** Piriformis syndrome is caused by compression or irritation of the sciatic nerve as it exits the greater sciatic notch beneath (or through) the piriformis muscle, producing buttock pain with radiation along the posterior thigh and leg, sometimes with paresthesia and activity-related exacerbation [1-4]. Symptoms often overlap with PLID-related radiculopathy, and both conditions can coexist "double-crush"[5–7]. Diagnosis rests on history, examination (Freiberg, FAIR), selective imaging (lumbar/pelvic MRI), and, where appropriate, electrodiagnostics (including H-reflex modulation during hip maneuvers) [3–6,8–10]. We present a single case of PS identified in a patient previously treated for PLID, highlighting the diagnostic pathway and response to ultrasound-guided injection with rehabilitation.

## Case Presentation

A 30-year-old male presented with sudden onset of acute low back pain with right buttock pain radiating to the posterior thigh and calf for 2 months, aggravated more by prolonged sitting than by walking and hip internal rotation. Previous treatments for presumed PLID included physiotherapy and analgesics, Ultrasound Guided Caudal Epidural with near to no relief or dissatisfactory relief. There was no bowel or bladder involvement and no history of direct hip trauma.

**Examination:** VAS 8/10 (worst with sitting >30 minutes), relieved with lying down. Lumbar end-range flexion was painful; straight-leg raise 45° on the right. Severe Focal tenderness was present over the sciatic notch. Freiberg & FAIR were positive on the right. FABER test was negative. Motor strength was full; sensation was mildly altered along the S1 distribution; reflexes were symmetrical.

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**Investigations:**
1. Lumbar MRI: Broad-based L5–S1 protrusion without definite nerve-root compression.
2. Complete Blood Count, C-reactive Protein report: Normal
3. Under ultrasound guidance, a diagnostic piriformis block was performed using 2 mL of 1% lidocaine, producing immediate abolition of the index buttock–leg pain; the pain recurred the following day as the anesthetic effect waned.

Working diagnosis: Piriformis syndrome (right), in the context of prior PLID with symptoms disproportionate to lumbar imaging.

**Interventional Method**
Setting & Position: Procedure room; lateral decubitus with symptomatic side up; hip and knee flexed.

Ultrasound: 2–8 MHz curvilinear probe. Landmarks identified along a line from the posterior superior iliac spine to the greater trochanter; probe placed ~5 cm caudal to visualize the piriformis over the obturator internus with the sciatic nerve deep/lateral.

**Needle/Approach:** 100-mm, 22-gauge echogenic needle, in-plane approach into the peripiriformis perisciatic fascial plane.

**Injectate:** 10mL Lidocaine + 40mg methylpred nisolone, delivered intramuscularly and along the perisciatic fascial plane after negative aspiration.

**Monitoring:** Immediate observation; no procedure-related complications.

**Rehabilitation Protocol**
1. Relative rest for 48–72 h, avoiding prolonged sitting and sustained external-rotation postures.
2. Piriformis stretching, gentle myofascial release, and progressive hip abductor/external rotator and core strengthening.
3. McKenzie-style lumbar extension as tolerated; sciatic nerve sliders introduced gradually.
4. Ergonomic coaching and graded activity over 2–4 weeks.

**Outcome**
The patient experienced rapid improvement in buttock pain and sitting tolerance. VAS scores were recorded pre-treatment, immediate post-injection, and at 1 and 3 months (Table 1).

**Table 1. Visual Analog Scale (VAS) Pain Scores**

| Time point | VAS (0–10) |
|---|---|
| Pre-treatment | 8 |
| Immediate post-injection | 3 |
| 1 month | 3 |
| 3 months | 2 |

No adverse events occurred. The patient resumed normal daily activities and reported improved sleep.

**Discussion**
This case underscores how piriformis syndrome may masquerade as, or coexist with, PLID-related radiculopathy, prolonging morbidity if not recognized[1-4,7]. Disproportionately severe buttock-predominant pain, reproduction of symptoms with Freiberg/FAIR tests, focal notch tenderness, and discordance between symptoms and lumbar imaging should raise suspicion for PS [3,4,8–10]. Pelvic MRI may show piriformis hypertrophy or edema, but can be normal;[5]. Therapeutic/diagnostic injections are central to care. Randomized data suggest ultrasound guidance achieves outcomes comparable to fluoroscopy/nerve-stimulator techniques while avoiding radiation and allowing real-time soft-tissue visualization[6,11,14]. Botulinum toxin is an option for refractory cases, though dosing remains debated [12,13]. Consistent with the literature and with a published series of PLID-treated patients later found to have PS, we used a local anesthetic–steroid mixture and observed sustained improvement[5]. In patients with persistent or recurrent "sciatica" after PLID-focused therapy, clinicians should systematically reassess for extraspinal sources-notably PS-and consider ultrasound-guided injection integrated with targeted rehabilitation.

**Limitations:** Single-case experience, short follow-up, and lack of validated disability indices (e.g., ODI). Future studies should examine standardized outcomes and long-term recurrence.

**Conclusion**
Piriformis syndrome should be considered in patients with buttock-predominant sciatica whose symptoms persist despite LDH-directed care. A multimodal approach—focused examination, selective imaging, and ultrasound-guided piriformis injection plus rehabilitation—can produce meaningful, durable relief.

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**Declarations:**
Patient consent: Written informed consent was obtained for the procedure and publication of de-identified information.

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**Conflicts of interest:** None declared.

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