



E-ISSN: 2707-8353  
P-ISSN: 2707-8345  
IJCRO 2024; 6(1): 89-91  
[www.orthocasereports.com](http://www.orthocasereports.com)  
Received: 08-02-2024  
Accepted: 14-03-2024

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## When surgery is not the answer: A case of sciatica and patient preference

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**DOI:** <https://doi.org/10.22271/27078345.2024.v6.i1b.197>

### Abstract

Back pain is a prevalent problem in clinical settings and sciatica stands out as a major contributor due to its significant impact on the well-being of patients. Sciatica typically results from pressure on the nerves in the back commonly caused by issues like herniated discs, spinal narrowing, or degenerative disc disease. Symptoms may include sharp pain, tingling sensations, and weakness in the lower extremities. This case focuses on a 23-year-old female presenting with acute sciatica due to a significant disc herniation at the L4-L5 vertebrae. Despite facing symptoms that could potentially lead to cauda equina syndrome, the patient opted for conservative treatments over surgery. This case report follows her journey through MRI scans that revealed a disc protrusion and considerable narrowing of the spinal canal alongside conservative management strategies that involved pharmacotherapy, epidural injections, and physical therapy. Over three months, the patient showed remarkable improvement, transitioning from severe disability to functional independence. This case emphasizes the value of tailoring care to patient preferences for treatment modalities. While there are discussions about whether conservative or surgical approaches are more effective for sciatica management, this particular example showcases successful non-surgical methods that highlight the importance of patient-centered care and the potential for substantial improvement, without resorting to surgery. This study contributes to the ongoing discourse on optimal strategies for sciatica management suggesting that non-invasive treatments can successfully alleviate symptoms and improve functionality.

**Keywords:** Cauda Equine Syndrome, Degenerative Disc Disease (DDD), Neurological symptoms, Multidisciplinary approach.

### Introduction

Back pain is a common complaint encountered in clinical practice, often presenting a diagnostic challenge due to its various potential etiologies. One of those etiologies is sciatica, characterized by radiating pain along the sciatic nerve, standing out for its debilitating nature and impact on the daily lives of patients. Sciatica arises from compression or irritation of lumbar nerve roots, commonly attributed to lumbar disc herniation, spinal stenosis, or degenerative disc disease [1]. Lumbar disc herniation is a leading cause of sciatica, contributing to significant morbidity and impaired quality of life [1]. A disc herniation is characterized by the displacement of disc material beyond the confines of the intervertebral disc space, often impinging on adjacent neural structures and causing neurological symptoms [2]. Compression of spinal nerve roots usually occurs at the L4-L5 and L5-S1 levels with symptoms of sharp, shooting pain radiating from the lower back through the buttocks and into the lower extremities [3]. While the clinical presentation of sciatica may vary among patients, common symptoms include back pain, numbness, tingling, and weakness along the affected nerve distribution [3]. Additionally, severe cases of lumbar disc herniation can result in cauda equina syndrome, characterized by bowel or bladder dysfunction, saddle anesthesia, and motor weakness in the lower extremities [3]. To prevent irreversible neurological sequelae, prompt recognition and management are required. Traditionally, the management of sciatica secondary to lumbar disc herniation has encompassed a spectrum of treatment modalities, ranging from conservative measures to surgical intervention. Conservative approaches often entail pharmacological therapy, physical rehabilitation, and epidural steroid injections, aimed at alleviating pain, reducing inflammation, and improving functional outcomes [4]. Conversely, surgical interventions, such as discectomy or micro discectomy, may be indicated in cases refractory to conservative management or the presence of progressive neurological deficits [5].

Despite the availability of these therapeutic options, the optimal management strategy for acute sciatica remains a subject of debate, necessitating a nuanced approach tailored to individual patient characteristics and preferences. Recent studies have emphasized the comparable efficacy of conservative versus surgical management in achieving long-term symptomatic relief and functional improvement, emphasizing the importance of shared decision-making and patient-centered care.

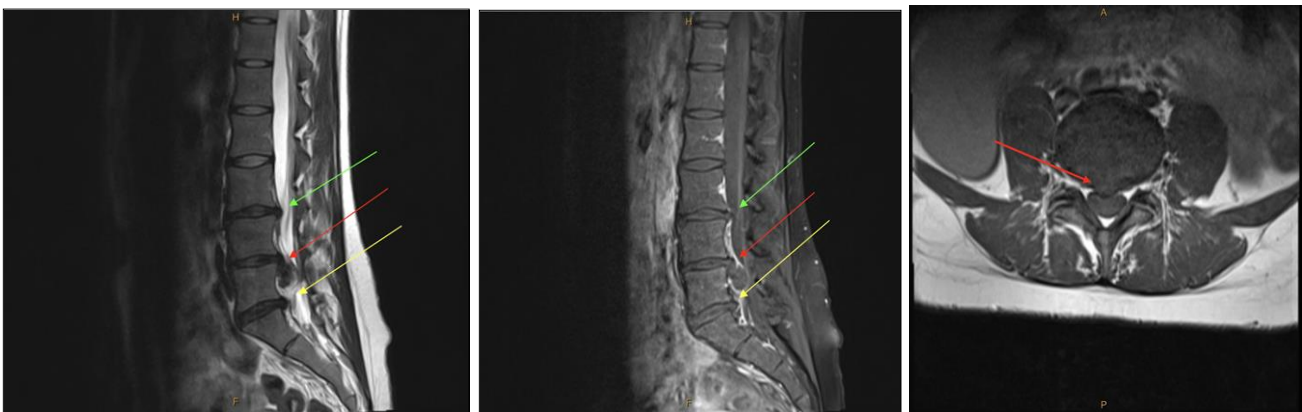
This case presentation sheds light on the clinical course and management of a young female presenting with acute sciatica secondary to a large disc herniation at the L4-L5 level. Through a comprehensive analysis of her clinical presentation, diagnostic workup, and treatment outcomes, this case showcases the challenges and complexities inherent in managing lumbar disc herniation-induced sciatica, while highlighting the pivotal role of personalized medicine in optimizing patient care and outcomes.

### Case Presentation

A 23-year-old female with no past medical or surgical history presents to the clinic complaining of persistent back pain with numbness, tingling, and shooting pains down her left leg. The patient states back pain began almost a month ago and describes it as a 10 out of 10 on the pain scale. Despite attempting over-the-counter (OTC) ibuprofen and prescription gabapentin from her primary care physician, the pain persisted. There are no known drug allergies. The patient denies any past or recent trauma or heavy lifting. Family history is pertinent for lumbar disc herniations and chronic back pain in her father that began at a similar age of 22 years. The patient reported waking up with a stiff back which progressively worsened despite attempts at rest, ice, heat, and OTC analgesics. She complains of numbness and tingling down her left lower extremity and has difficulty walking on her own due to shooting pain down her left leg. She relies on her parents to assist her in her activities of

Daily Living (ADLs) consequently, her Roland-Morris Disability Scale (RMS-L) scored a 21 out of 23 representing a higher level of pain-related disability. In addition, she complained of hip pain and lumbar stiffness, adopting a chronic flexed forward position. On physical exam, she is unable to walk unassisted and heavily relies on the wheelchair provided. Her assessment showed a limited Range of Motion (ROM) of her left hip, left knee, and left foot in comparison to her right lower extremity. She had 1 out of 5 strength of her left lower extremity which was markedly decreased compared to her right leg. The patient also had an absence of dorsiflexion. A Babinski sign was not observed on this patient. At this stage, diagnostic differentials included disc herniation, spondylolysis, discal cyst, synovial cyst, or spinal epidural hematoma.

Magnetic resonance imaging (MRI) with and without contrast in T<sub>1</sub> and T<sub>2</sub> views of her lumbar spine was ordered. MRI showed a generalized disc bulge with mild canal stenosis at L5-S1 and mild bilateral neural foraminal narrowing, as well as a large central and left paracentral disc extrusion measuring 2.4 cm at L4-L5 with severe spinal canal stenosis and mass effect on the left-sided cauda equina posterior to the L5 vertebral body [Figures 1-3]. Additionally, there is a moderate right paracentral extrusion with mild canal stenosis at L3-L4 [Figures 1-3]. This finding confirmed a diagnosis of acute sciatica due to a large disc herniation at L4-L5 with cauda equina syndrome. Urgent consultation with a spinal surgeon was recommended, but the patient expressed a preference for conservative measures initially. She was prescribed Percocet for acute pain relief and underwent a series of three spinal epidural injections spaced one week apart. Subsequently, the patient began in-house physical therapy, incorporating TENS units, heat applications, core strengthening exercises, and gait training. Within one month, the patient regained the ability to walk unassisted. By 3 months, she was able to complete activities of daily living (ADLs) independently.



**Fig 1-3:** Top left to bottom left

MR Lumbar Spine with and without contrast T<sub>2</sub> Sagittal view. The green arrow indicates L3-L4 region, red arrow indicates L4-L5 region, and yellow arrow indicates L5-S1 region.

MR Lumbar Spine with and without contrast T<sub>1</sub> Sagittal view. The green arrow indicates L3-L4 region, red arrow indicates L4-L5 region, and yellow arrow indicates L5-S1 region MR Lumbar Spine with and without contrast T<sub>1</sub> Axial view

### Discussion

Sciatica often leads to a significant impairment in one's mobility and quality of life due to difficulty performing basic tasks such as sitting, standing, or even walking as mentioned above. While the cause often stems from an inferior extrusion at L4-L5, resulting in a significant left paracentral mass effect, this particular case stands out due to its distinctive treatment and subsequent outcomes.

The two present mainstay treatments for sciatica due to disc herniation are either conservative or surgical. Previous

research has not shown significant differences between early surgical treatment and prolonged conservative treatment after a 1-year follow-up [6]. The only advantage surgical treatment offered was faster relief of sciatica symptoms, however, patients had a slow rate of recovery in the first 2 weeks post-surgery significantly limiting their daily functioning [6]. On the other hand, patients receiving conservative management noticed improvements only after six months of treatment but without significant initial deterioration [7]. Further research has proved surgery to be favorable in patients with positive nerve root tension sign (positive straight leg raise test) or neurologic deficit (e.g. foot drop, reduced ankle/knee reflex, numbness) and disc herniation on MRI or CT due to the challenges faced with conservative management to minimize neurological deficits [7]. A popular instrument used by physicians to quantify the disability caused by sciatica is by using the modified Roland-Morris disability scale (RMS-L) [8]. Our case presented with a score of 21/23 on the RMS-L indicating a severe disability caused by the patient's condition. Despite the progressive neurological deficits in her case, the patient opted for conservative management for personal reasons. The treating physician respected the patient's wishes despite surgery being a potentially more beneficial option in her situation. The treatment plan was modified to shorten the interval between epidural injections to one week instead of the typical two weeks, considering the patient's young age and capacity to tolerate steroids along with the remaining conservative treatment modalities.

In this case, following the implementation of the adjusted plan, weekly follow-ups were scheduled to facilitate optimal recovery. Approximately two months later, the patient had an RMS-L score of 7/23. A difference of at least 11 points from the baseline must be seen to define recovery [9]. In our case, a 14-point difference was seen indicating an outstanding recovery of symptoms. Additionally, the patient displayed mild residual neurological deficits without any indications of motor deficits, a phenomenon not typically observed in previous studies within such a short timeframe with the utilization of conservative management.

### Conclusion

In this case study we outlined the case of a 23-year-old female dealing with sciatica caused by a prominent lumbar disc herniation. Confronted with symptoms and the risk of cauda equina syndrome, her decision to opt for invasive treatment instead of surgery highlights the importance of respecting patient autonomy and preferences in medical decision-making. Through a combination of medication, epidural injections, and physical therapy her condition improved significantly allowing her to move from disability to independence in just three months. The impressive recovery of the patient showcases the effectiveness of treatment methods for sciatica challenging the conventional reliance on surgical procedures and advocating for personalized care. The successful outcome of this case contributes evidence supporting the use of, non-surgical treatment options in the management of sciatica, and underscores the merit of patient involvement in their treatment journey.

### Informed Consent Statement

Written informed consent has been obtained from the patient to publish this paper.

### Data Availability Statement

The data presented in this study are available on request from the corresponding author.

### Conflicts of Interest

The authors declare no conflict of interest.

### References

1. David Davis; Kushagra Maini; Muhammad Taqi; Arvind Vasudevan. Sciatica; c2024 Jan.
2. Suthar P, Patel R, Mehta C, Patel N. MRI evaluation of lumbar disc degenerative disease. *Journal of clinical and diagnostic research: JCDR*. 2015 Apr;9(4):TC04
3. Al Qaraghi MI, De Jesus O. Lumbar Disc Herniation. [Updated 2023 Aug 23]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; c2024 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK560878/>
4. El Melhat AM, Youssef AS, Zebdawi MR, Hafez MA, Khalil LH, Harrison DE. Non-surgical approaches to the management of lumbar disc herniation associated with radiculopathy: A Narrative Review. *Journal of Clinical Medicine*. 2024 Feb 8;13(4):974.
5. Sørli A, Gulati S, Giannadakis C, Carlsen SM, Salvesen Ø, Nygaard ØP, *et al*. Open discectomy vs microdiscectomy for lumbar disc herniation-a protocol for a pragmatic comparative effectiveness study. *F1000 Research*; c2016, 5.
6. Peul WC, Houwelingen VHC, Hout VDWB, Brand R, Eekhof JA, Tans JT, *et al*. Surgery versus prolonged conservative treatment for sciatica. *New England Journal of Medicine*. 2007 May 31;356(22):2245-56
7. Bailey CS, Rasoulinejad P, Taylor D, Sequeira K, Miller T, Watson J, *et al*. Surgery versus conservative care for persistent sciatica lasting 4 to 12 months. *New England Journal of Medicine*. 2020 Mar 19;382(12):1093-102.
8. Kim M, Guilfoyle MR, Seeley HM, Laing RJ. A modified Roland-Morris disability scale for the assessment of sciatica. *Acta neurochirurgica*. 2010 Sep;152:1549-53.
9. Peul WC, Houwelingen VHC, Hout VDWB, Brand R, Eekhof JA, Tans JT, *et al*. Prolonged conservative treatment or early surgery in sciatica caused by a lumbar disc herniation: Rationale and design of a randomized trial [ISRCT 26872154]. *BMC Musculoskeletal Disorders*. 2005 Dec;6:1-1.
10. Valat JP, Genevay S, Marty M, Rozenberg S, Koes B. Sciatica. Best practice & research *Clinical rheumatology*. 2010 Apr 1;24(2):241-52

#### How to Cite This Article

Moussa M, Akel M, Ziq A, Shah S, Borges SH. When surgery is not the answer: A case of sciatica and patient preference. *International Journal of Case Reports in Orthopaedics*. 2024;6(1):89-91.

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