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Case Study

A Case Report On Lumbar Severe Canal Stenosis

Hiranya S. S.¹, Agnes R. P.^{1*}, Drishya L.², Shaiju Dharan³

¹Students, Ezhuthachan College of Pharmaceutical Sciences, Marayamuttom, Thiruvananthapuram.

²Assistant Professor, Department of Pharmacy Practice, Ezhuthachan College of Pharmaceutical Sciences, Marayamuttom, Thiruvananthapuram.

³Principal/HOD, Department of Pharmacy Practice, Ezhuthachan College of Pharmaceutical Sciences, Marayamuttom, Thiruvananthapuram

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ABSTRACT

Lumbar severe canal stenosis is a degenerative condition characterized by narrowing of the spinal canal, leading to compression of the spinal nerve roots. It commonly affects individuals over 50 years of age and presents with low back pain, neurogenic claudication. It occurs due to osteoarthritis, rheumatoid arthritis, injury to spin, after injury and with the symptoms of severe back pain, numbness, tingling etc. A 42-year-old male presented with severe low back pain of five days duration. His routine laboratory investigations were within normal limits. Magnetic resonance imaging (MRI) of the lumbar spine confirmed the diagnosis of lumbar canal stenosis. The patient was treated conservatively with analgesics, anti-inflammatory medication for pain and swelling, and calcium supplementation. Clinical symptoms improved during hospitalization, and the patient was discharged in stable condition after resolution of the acute episode. This case emphasizes the importance of considering lumbar canal stenosis in younger patients presenting with severe persistent low back pain. Early diagnosis using MRI and timely conservative management can provide significant symptomatic relief, improve quality of life, and reduce the need for surgical intervention.

INTRODUCTION

Lumbar severe canal stenosis is a condition characterized by the narrowing of the lumbar spinal canal, which compresses the nerves traveling through the lower back into the legs. It is

defined as the narrowing of the osseoligamentous vertebral canal and/or the intervertebral foramina in the lumbar spine, leading to compression of the thecal sac, cauda equina, or lumbar nerve roots. The narrowing may involve the entire spinal canal or only a portion of it at one or more lumbar

***Corresponding Author:** Agnes R. P.

Address: Students, Ezhuthachan College of Pharmaceutical Sciences, Marayamuttom, Thiruvananthapuram.

Email ✉: agnesrjn@gmail.com

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vertebral levels. The most common cause of lumbar canal stenosis is osteoarthritis (OA). Other causes include spinal injury, a congenitally narrow spinal canal, spinal tumors, certain bone disorders, rheumatoid arthritis, and previous spinal surgery. The condition develops as degeneration of the intervertebral discs causes hypermobility of the vertebral segments. This results in increased stress on the posterior facet joints, thickening of surrounding ligaments, and narrowing of the intervertebral disc spaces, ultimately reducing the size of the spinal canal and compressing the nerve structures. Patients commonly present with low back pain, burning pain radiating to the buttocks and legs, numbness, tingling, muscle cramps, weakness in the lower limbs, and difficulty walking due to neurogenic claudication. The diagnosis is based on the patient's history, physical examination, and imaging studies. X-rays help identify degenerative changes, while CT scans and MRI provide detailed visualization of the spinal canal and nerve compression. Additional investigations such as nerve conduction studies and electromyography (EMG) may be performed to assess nerve function. Treatment depends on the severity of symptoms and may include conservative measures such as physical therapy, nonsteroidal anti-inflammatory drugs (NSAIDs), corticosteroids, and lifestyle modifications. Other supportive therapies include acupuncture and chiropractic care. In severe cases with significant neurological deficits or persistent symptoms, surgical decompression may be required to relieve pressure on the affected nerves.

CASE REPORT

The report investigate a case of lumbar severe canal stenosis. A 44years old male patient was admitted with the complaints of severe back pain for 5 days, Patient also had a history of Type 2 Diabetes mellitus, Chronic calcific pancreatitis

and he was taking the following durgs in past Inj. Tersiba 22units OD, Inj. Humalog 8-10-6 units, Tab. Glycomet SR 1000mg 1-0-1, Tab. Remylin D 1-0-0, Tab. Gabaneyron NT 100/10mg 1-0-1, Tab. Panlipase 150mg 2-2-2, Tab. Antioxid P 0-0-1 . The patient undergone MRI-scan whole spine (plain) shows at L3-L4 severe lumbar canal stenosis, at L4-L5: left moderate lateral recess stenosis, mild degenerative disc disease in cervical spine. These findings supported the diagnosis of Lumbar severe canal stenosis. He was treated with Tab. Etoshine MR 60/4mg 1-0-1, Tab. Pantop 40mg 1-0-1, Tab. Shelcal HD 500mg OD, Glycomet SR 1000mg 1-0-1, Tab. Remylin D 1-0-0, Tab. Panlipase 150mg 2-2-2, Tab. Antioxid P 0-0-1, Cap. Doxy 100mg 1-0-1, Inj. Izone S 1.5gm BD, Tab. Meganeuron 75mg OD, Tab. Gabantin GRS 300mg, Tab. Pregab 75mg. His vitals was stable with the heart rate of 70bpm, a temp 98.6°F, BP of 130/80mmHg and respiratory rate 20breaths/min. After resolving the acute episode the patient was discharged and monitored closely.

DISCUSSION

Lumbar canal stenosis is a common degenerative disorder caused by narrowing of the spinal canal, leading to compression of the cauda equina or nerve roots. It most commonly affects individuals older than 50 years; therefore, its occurrence in this 42-year-old male is relatively uncommon and highlights the importance of considering LSS even in younger patients presenting with severe low back pain.

Radiological lumbar canal stenosis has been reported in approximately 11–39% of adults, whereas symptomatic lumbar spinal stenosis occurs in about 5–11% of the population. The prevalence is considerably lower in individuals younger than 50 years, estimated to be **less** than 5%, making this case clinically noteworthy.



It is associated with high morbidity due to chronic low back pain, neurogenic claudication, reduced mobility, impaired functional capacity, and decreased quality of life. However, the condition has very low mortality, as it is not usually life-threatening. Mortality is generally related only to associated comorbidities or complications following major surgery rather than the disease itself.

CONCLUSION

This case highlights the importance of early clinical assessment and prompt radiological investigation, particularly MRI, in patients with severe or persistent back pain. Lumbar severe canal stenosis is a progressive degenerative disorder that results in narrowing of the spinal canal and compression of the neural structures, leading to significant pain, neurological symptoms, and functional limitations. Although it is more commonly seen in older adults, this case demonstrates that the condition can also occur in younger individuals and should be considered in patients presenting with persistent low back pain and neurological complaints. In this case, a 44-year-old male with a history of type 2 diabetes mellitus and chronic calcific pancreatitis presented with severe back pain of five days' duration. MRI of the whole spine confirmed severe lumbar canal stenosis at the L3–L4 level, enabling timely diagnosis and appropriate medical management. The patient responded well to conservative treatment with analgesics, neuropathic pain medications, vitamin supplementation, and supportive care. His vital signs remained stable throughout hospitalization, and he was discharged with advice for regular follow-up and continued monitoring. In this early diagnosis and appropriate treatment can effectively relieve symptoms, improve functional status, and reduce the risk of disease progression and neurological

complications. Furthermore, careful management of associated comorbidities, patient education regarding medication adherence, physical activity, and lifestyle modifications play a vital role in achieving favorable long-term outcomes. Overall, this case emphasizes the need for a multidisciplinary approach and individualized patient care to optimize recovery and enhance the quality of life of patients with lumbar severe canal stenosis.

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