# Chapter 28
# Lumbar Stenosis and Cauda Equina Syndrome

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**Keywords** Lumbar stenosis • Cauda equina syndrome

## Overview

The comprehensive workup of lumbar stenosis and cauda equina syndrome includes complete neurological exam, etiology of stenosis, progression of deficits, specific location of stenosis, and duration of deficits.

## What to Ask

1. What are the specific neurologic deficits?
2. What is the duration of symptoms?
3. Has the patient had any previous surgeries or injections?

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J.D. Hodax et al. (eds.), *The Orthopedic Consult Survival Guide*, DOI 10.1007/978-3-319-52347-7_28,

## What to Request

1. MRI of the lumbar spine with low threshold for requesting MRI of the entire spine to rule out double crush
2. NPO if concern for cauda equina syndrome

## When to Escalate

1. Acute loss of ability to ambulate
2. Acute incontinence of bowel and bladder or acute urinary retention
3. Significant progression of neurologic symptoms

## Imaging

1. MRI of the lumbar spine (see Fig. 28.1).
2. CT myelogram is required if the patient cannot undergo MRI (e.g., pacemaker).

## Effective Communication

1. Neurologic status is crucial.
2. Etiology of stenosis.
3. Progression of deficits.
4. Specific location of stenosis.
5. Duration of deficits.

## Key Exam Pearls

1. Complete neurologic exam, including reflexes and rectal tone
2. Perineal and medial thigh sensation if concern for cauda equina syndrome
3. Pathologic signs, including Hoffman's, Babinksi, clonus

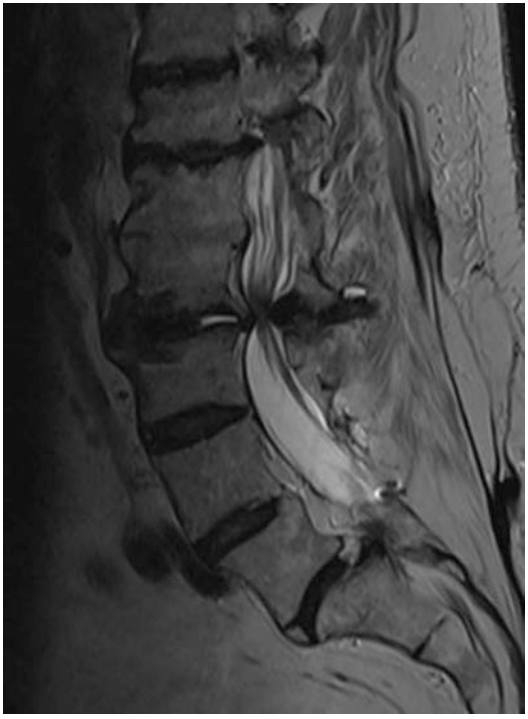

FIGURE 28.1 A midsagittal MRI image demonstrating severe narrowing at L2–L3

4. Essential to check for signs of coexisting cervical myelopathy, especially in patients with degenerative spines
5. Tension signs such as straight leg raise (L4-S1) and hip extension (L2-L3)

## Pathology

Lumbar stenosis can be in the central canal, the lateral recess, or the neuroforamen. Central stenosis is often caused by ligamentum flavum hypertrophy or degenerative spondylolisthesis, and it results in findings of neurogenic claudication.

Typically, central stenosis will not bring a patient to the emergency room unless they have sustained a massive herniated disk that is causing cauda equina syndrome, characterized by saddle anesthesia, bilateral leg weakness, urinary retention and subsequent overflow incontinence, and bowel incontinence. Patients with cauda equina syndrome require urgent surgical decompression.

Lateral recess and foraminal stenosis is typically caused by disk herniation, facet hypertrophy, facet cysts, or spondylolisthesis. In the case of disk herniation, tension signs will often be positive. It is important to remember that most commonly the disk herniation will be in the lateral recess, thus affecting the traversing root (L5 at L4–L5) as opposed to the exiting root (L4 at L4–L5). Unless the patient has neurologic deficits, disk herniation should be treated with anti-inflammatories and pain control in the emergency department.

## Follow-Up

1. Follow the neurologic exam.