

Emergency Department's Case of the Month

The Back Pain Trap

By Sam G. Campbell, MB, BCh, CCFP(EM)

A 31-year-old woman presents complaining of lower abdominal pressure that feels similar to what she felt when she was pregnant. She also has back pain, for which she was recently prescribed oxycodone. The oxycodone has been effective in relieving her pain.

On further questioning, she reveals she has been constipated (which she attributes to the oxycodone) and has noticed numbness in both buttocks. On examination, her vital signs are normal. She has tenderness over her lower lumbar spine, but a negative straight leg raising test. Her lower limb reflexes are normal. On rectal examination, her anal tone is found to be considerably decreased, as is her perineal sensation to light touch.

At your request, the nurse performs a post-void urethral catheterization, which reveals a post-void bladder volume of 900 mL of urine.

Questions:

1. On history and physical examination, what features should be elicited in every patient presenting with back pain?
2. Why is this so important?
3. What other features might help in the diagnosis?
4. What investigations are indicated?
5. Are there other causes of this clinical picture?

Answers:

1. On history and physical examination, what features should be elicited in every patient presenting with back pain?

Particulars regarding bowel and bladder function

(incontinence or retention) and perineal sensation should be solicited, and any suspicion of deficit in these areas should prompt an immediate digital rectal examination to assess anal tone and perineal sensation. A useful question to ask is if the toilet paper feels different when the patient wipes after a bowel or bladder movement.

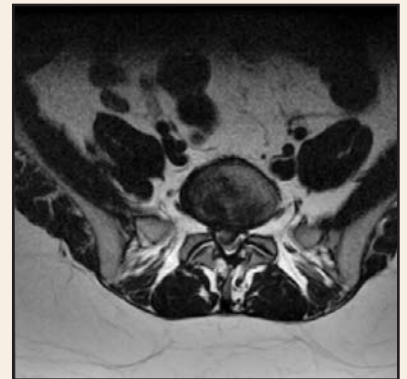


Figure 1. Axial view of the disc prolapse extending into the spinal cord.

2. Why is this so important?

Alteration or loss of neurologic function to an area supplied to the “saddle area” should make one think of cauda equina syndrome. This relatively uncommon syndrome represents one of the few surgical emergencies in non-traumatic back pain (although it may occur in combination with a history of trauma).

The cauda equina (horse’s tail) are the nerve roots that keep going along the spinal canal beyond the end of the spinal cord (which ends at the L1-L2 level). They are very susceptible to injury and delayed correction of the source of injury can result in permanent bowel, bladder, and sexual dysfunction, or even paraplegia. The fact that the presentation can be very subtle and occurs as an uncommon feature of a very common, and usually benign, problem (lower back pain) makes cauda equina syndrome a frequent source of malpractice litigation.



Figure 2. Saggital MRI demonstrating a large disc at the L5-S₁ level, compressing the cauda equina.

3. What other features might help in the diagnosis?


The most common cause of cauda equina syndrome is a herniated lumbar disk (usually L4-L5) pushing on the cauda equina. Symptoms are variable, depending on the degree of herniation and the nerve roots involved. Symptoms and signs may evolve and vary with time, and may be exacerbated by exercise, specifically walking downhill. More typical features of back pain or sciatica usually accompany the syndrome. Apart from “saddle area” anesthesia and bowel or bladder dysfunction, a range of reflex, motor, or sensory abnormalities may be present. Any neurologic symptoms in a patient with back pain should prompt rectal examination and consideration of post-void urine measurement. A history of any condition likely to contribute to encroachment on the spinal canal (osteoporotic fractures,

cancer, bone infection, *etc.*) may suggest the need to exclude this condition.

4. What investigations are indicated?

Plain lumbar spine X-rays are not usually helpful in the investigation of cauda equina syndrome. Although magnetic resonance imaging (MRI) is the ideal, computed tomography scan or myelography can be used. (This patient’s MRI is shown in Figures 1 and 2.) Suspicion of this syndrome warrants immediate referral to an orthopedic or neurosurgical specialist. Early decompressive surgery can prevent devastating sequelae.

5. Are there other causes of this clinical picture?

There are other causes, however, cauda equina syndrome is the most common. These other causes include spinal cord compression, lumbosacral plexopathy, and sacral myelitis following genital herpes simplex infection. 

This department covers selected points to help avoid pitfalls and improve patient care by family physicians in the ED. Submissions and feedback can be sent to diagnosis@sta.ca.

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