

CAUDA EQUINA SYNDROME

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What is Cauda Equina Syndrome?

- Cauda equina syndrome results from the dysfunction of multiple sacral and lumbar nerve roots in the lumbar vertebral canal. Such root dysfunction can cause a combination of clinical features, but the term cauda equina syndrome is used only when these include impairment of bladder, bowel, or sexual function, and perianal or “saddle” numbness.
- Annual incidence of cauda equina syndrome resulting from intervertebral disc herniation is estimated at 1.8 per million population

What we need to know!

- Understanding cauda equina syndrome is essential not only for spinal surgeons, but more importantly for GPs, ED staff, and orthopaedic surgeons / trainees.
- Recognition can be delayed for several reasons:
 - Bowel, bladder and sexual dysfunction are common presentations and can be part of many different conditions.
 - Many patients will not describe symptoms of incontinence or sexual dysfunction due to embarrassment.
- Significant area of litigation worldwide.

Clinical Diagnosis & Symptoms

- Dysfunction of bladder, bowel, or sexual function.
- Sensory changes in saddle or perianal area.
- **Other possible symptoms**
 - Back pain (with or without sciatic-type pains)
 - Sensory changes or numbness in the lower limbs
 - Lower limb weakness
 - Reduction or loss of reflexes in the lower limbs
 - Unilateral or bilateral symptoms

Presentation

- Three classic patterns of presentation
 - It can present acutely as the first symptom of lumbar disc herniation (type 1).
 - As the endpoint of a long history of chronic back pain with or without sciatica (type 2)
 - Insidiously in a more chronic way with slow progression to numbness and urinary symptoms (type 3).
- Most clinicians now divide cauda equina syndrome into two clinical categories.
 - Cauda equina syndrome with retention, in which there is established urinary retention
 - Incomplete cauda equina syndrome, in which there is reduced urinary sensation, loss of desire to void, or a poor stream, but no established retention or overflow.

Causes

- Usually large central L4/5 + L5/S1 Disc
- Congenitally narrow canal with superimposed stenosis.
- Metastatic compression
- Trauma
- Post operative haematoma. (Gelfoam)

Examination

- Full examination is essential and should be fully documented.
- Perineal sensation can be tested from the outside in towards the sphincter using a gentle gloved finger stroke and, if there is any uncertainty, a folded tissue and an unfolded paper clip.
- After this, a rectal examination can be performed.

Imaging

- Clinical diagnosis of cauda equina syndrome even by senior spinal trainees has a 43% false positive rate.
- Accurate confirmatory imaging is important.
- MRI scan is imaging of choice.

Treatment

- Emergency discectomy
- Technically demanding.
- Great care needs to be taken not to avoid further neurological injury.

Urgency of Treatment

- No evidence.
- Incomplete some evidence for early decompression, results suggest better improvement.
- Complete no evidence.
- If this was your relative, what would you do?

Medicolegal Implications

- Persisting cauda equina syndrome has a devastating effect on personal and social life.
- Its mismanagement is one of the commonest causes for litigation in spinal surgery.
- Most patients are young to middle aged and in work before they develop cauda equina syndrome, so the size of claims is large.
- The presence of residual symptoms means that many of these patients are unable to work and have genitourinary and bowel symptoms.

Medicolegal Implications

- From 1997 to 2006 the NHS Litigation Authority dealt with 107 cases in England in which care in hospital had been compromised.
- Volume of cauda equina cases should be 100 per year in England.
- 10% litigation rate.
- 35% of litigation cases the primary complaint was against the emergency department and in 52% it was against the inpatient management team

Tips for Non-Specialists

- Be alert to the development of new symptoms of perianal sensory change or bladder symptoms in patients with an increase in back pain or sciatica.
- Be aware that cauda equina syndrome can arise insidiously when patients who have had back and leg pain for a long time develop bladder symptoms gradually.
- Use the defined referral pathway – Contact Orthopaedic Registrar on Bleep 300 via Ipswich Hospital Switchboard.
- Make sure that clinical documentation is clear and well recorded

Summary

- Cauda equina syndrome is rare, but devastating if symptoms persist
- Clinical diagnosis is not easy and even in experienced hands is associated with a 43% false positive rate.
- The investigation of choice is magnetic resonance imaging
- Once urinary retention has occurred the prognosis is worse
- Good retrospective evidence supports urgent surgery especially in early cases
- Litigation is common when the patient has residual symptoms