Treatment injury case study

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Te Kaporeihana Āwhina Hunga Whara

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EVENT: Delay in diagnosis of cauda equina syndrome

INJURY: Spinal cord damage

Case Study

Judy, a 52-year-old lawyer, presented to hospital with lower back pain and leg weakness.

Judy had a history of back pain and sciatica involving mild weakness and chronic numbness in her right leg over several months. This had been managed by her GP with analgesia.

Judy went to the emergency department (ED) as her symptoms had worsened in the last week. The ED doctor noted Judy's complaint of worsening pain and weakness and altered sensation, now in her left leg as well as the right. Judy also advised a loss of feeling in her rectal and genital areas and that she was unable to sense when she was passing urine.

The ED doctor was concerned about the possibility of cauda equina syndrome and did a thorough physical examination. The result of Judy's neurological examination was considered normal, and a rectal exam found that Judy had normal anal tone and had normal perianal sensation. Blood tests were also normal and a spinal X-ray demonstrated disc space narrowing at L4/5 and L5/S1, but no other abnormalities.

Because of Judy's normal physical exam findings, the doctor diagnosed sciatica and Judy was discharged from the ED after four hours, with a script for tramadol and instructions to see her GP if her symptoms persisted.

Five days later Judy was brought to the hospital by ambulance as her neurological symptoms had deteriorated overnight. She was unable to walk and was incontinent of bowel and bladder.

An urgent MRI showed large central posterior disc protrusions at L4/5 and L5/S1 with spinal stenosis and nerve root compression. Cauda equina syndrome was diagnosed and Judy was taken for surgery immediately, but she was left with partial paralysis of both legs and permanent bowel and bladder dysfunction.

A treatment injury claim was lodged alleging further spinal damage caused by a delay in timely treatment and subsequent progression of cauda equina syndrome. ACC sought advice from an emergency physician and an orthopaedic surgeon, and both concluded that, despite the normal exam findings, a number of "red flags" had been evident and this meant that an MRI should have been performed immediately. Judy had been still able to walk at first presentation, despite some symptoms of nerve damage, and timely investigation and surgery would likely have significantly reduced or prevented the permanent nerve damage she eventually suffered. ACC accepted the claim and was able to assist Judy with her rehabilitation and care.

Key points

- Low back pain is a common complaint and vigilance is needed to identify red flags
- Physical examination alone is not sufficient to rule out red flag diagnoses
- A CT scan or MRI is warranted if there is a high index of suspicion
- Cauda equina syndrome represents a true surgical emergency that must be addressed immediately
- A liberal imaging and referral strategy is required where red flag diagnoses are considered.

Expert Commentary

Neil Waldman FACEM

Approximately 70–90% of adults will experience acute low back pain during their lifetimes. Most cases will resolve within six weeks. It is estimated that 85% of patients have no definitive diagnosis and are presumed to have pain originating from the soft tissues. Nevertheless there are rare conditions that it is critical to diagnose, such as cauda equina syndrome.

Case study

Cauda equina syndrome is most commonly due to massive central disc herniation, which causes compression of multiple, bilateral lumbar and sacral nerve roots. It can also be caused by spinal epidural abscess, haematoma, trauma and malignancy.

In contrast to the unilateral leg pain of sciatica, the back pain of cauda equina syndrome radiates to both legs with multiple-level radiculopathies. Saddle anaesthesia develops as well as impaired bowel and bladder function. While the condition is extremely rare, it represents a true surgical emergency that must be addressed immediately.

The surgical outcomes for patients with cauda equina syndrome are determined primarily by the symptoms at presentation. Patients who can ambulate on presentation generally remain ambulatory. Patients who present with paresis have only a 50% chance of walking again and 79% of cases with incontinence will be permanent.

Diagnostic dilemmas arise because the condition is rare and patients can present with vague neurological compromise and only mild to moderate pain. The most consistent exam finding is a measured urinary retention of more than 100-200 millilitres of post-void urine volume. This is present in up to 90% of cases. A sensory deficit over the buttocks and upper posterior thigh and perianal area is found in 75% of cases and decreased anal sphincter tone is present in 60-80% of cases.

Lack of evidence on examination does not rule out the diagnosis and in all cases where there is high clinical suspicion, an MRI of the lumbar spine should be performed.

Red flags include the following:

- Age under 18 or over 50 years of age
- History of malignancy or unexplained weight loss
- Fever or immunocompromise suggesting abscess or intravenous drug abuse
- Progressive neurological deficit, such as bowel or bladder incontinence or saddle anaesthesia
- Recent trauma (other than strain) or osteoporosis
- Prolonged duration of symptoms for more than four to six weeks.

Plain X-rays should be performed with any red flags, however, a normal X-ray with high index of suspicion or an abnormal X-ray still needs further imaging. MRI is the definitive investigation method for cauda equina syndrome (along with malignancy and spinal infection) because of its superior soft tissue resolution. CT scans are superior to MRI for the evaluation of vertebral fractures only.

Intravenous dexamethasone should be started on all suspected cases of cauda equina syndrome or cord compression to reduce oedema, provide pain relief and improve neurological symptoms while awaiting diagnostic studies and surgical decompression.

Immediate referral to a neurosurgeon or orthopaedic specialist specialising in back surgery is indicated in all suspected cases of cauda equina syndrome or spinal cord compression, as urgent surgical decompression may be required. Surgical treatment may also be needed for fractures, abscesses and the treatment of malignancies.

Grave consequences result from missed diagnoses of cauda equina syndrome. Vigilance and a liberal strategy for referral are highly recommended.

References

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Claims information

Between 1 July 2005 and 18 November 2011, ACC received 33 claims for delays in diagnosis and treatment leading to nerve damage (including paraplegia and quadriplegia). Of these, 17 (51.5%) were accepted.

Of the accepted claims, nine related to compression of the spinal cord arising from diagnoses such as cauda equina syndrome, spinal infection and malignancy.

The most common reason for declining a claim was that the injury was not caused by treatment, but rather arose wholly or substantially from the underlying health condition.

How ACC can help your patients following treatment injury

Many patients may not require assistance following their treatment injury.

However, for those who need help and have an accepted ACC claim, a range of assistance is available, depending on the specific nature of the injury and the person's circumstances. Help may include things like:

- contributions towards treatment costs
- weekly compensation for lost income (if there's an inability to work because of the injury)
- help at home, with things like housekeeping and childcare.

No help can be given until a claim is accepted, so it's important to lodge a claim for a treatment injury as soon as possible after the incident, with relevant clinical information attached. This will ensure ACC is able to investigate, make a decision and, if covered, help your patient with their recovery.

About this case study

This case study is based on information amalgamated from a number of claims. The name given to the patient is therefore not a real one.

The case studies are produced by ACC's Treatment Injury Centre, to provide health professionals with:

- an overview of the factors leading to treatment injury
- expert commentary on how similar injuries might be avoided in the future.

The case studies are not intended as a guide to treatment injury cover.

Send your feedback to: TI.info@acc.co.nz

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