

A Case Study of the Cauda Equina Syndrome

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Abstract

Case Report

A 45-year-old farmer presented to the emergency department in July 2017 in Kerman. With complaints of urinary incontinence, intense low back pain, numbness of lower limbs that the patient was unable to stand or walk without support, sphincterian and sexual dysfunction with fecal incontinence from two days. The initial MRI showed signs of an intervertebral disc herniation that determined the need for further investigation.

Keywords: A 45-year-old farmer, Kerman, urinary, low back pain, sphincterian, sexual, intervertebral.

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BACKGROUND

Low back pain affects millions of people every year and, in most cases, it improves without surgery. But severe back pain can be a symptom of a serious condition that is not well known and is often misdiagnosed [1]. In fact, it is Cauda equina syndrome (CES) that is classically characterized by compression of the lumbar, sacral and coccygeal nerve roots distal to the end of the medullary cone [2]. It is a disease of low incidence in the population, at around 1 case per 33000. Patients with this syndrome are often admitted to the hospital as a medical emergency. It requires urgent orthopedic care and its treatment of choice continues to be surgical decompression, which, if performed 48 hours before the onset of the symptoms, reduces the neurological damage and improves the patient's prognosis [3].

CASE PRESENTATION

A 45-year-old farmer was referred to the emergency department, 2 days after sudden onset of severe back pain. The pain was relieved with hydrocortisone in the form of IV. He had no associated fever, abdominal pain, diarrhoea, myalgia, or arthralgia. A careful medical exam on physical examination, the patient was alert and fully oriented and Axillary temperature was 36.7°C, pulse 90 beats per min, blood pressure 100/60 mm Hg, and respiratory rate 20 breaths per min. The MRI Scan showed evidence of mild narrowing of the intervertebral disk spaces between L3-4 and L4-5 and showed herniated disk material located along the left lateral aspect of the vertebral canal. The only reliable way of including or excluding CES (Cauda Equina Syndrome) is to perform MRI on all patients

with suspected CES. The patient received an initial dose of dexamethasone, 10mg, intravenously, followed by 4mg intravenous dose every six hours. Patient referred to the local spinal service for emergency surgery

Investigations

Magnetic resonance imaging of the patient's lumbar spine showed evidence of mild narrowing of the intervertebral disk spaces between L3-L4 and L4-L5 and showed herniated disk material located along the left lateral aspect of the vertebral canal. The only reliable way of including or excluding CES (Cauda Equina Syndrome) is to perform MRI on all patients with suspected CES (Figure 1).

Differential diagnosis

In this case at first there was a possibility of infection or tumor. Some of the Disorders that may be misleading with this disease include: Acute inflammatory demyelinating polyradiculoneuropathy, Amyotrophic lateral sclerosis in physical medicine and rehabilitation, Diabetic neuropathy, Guillain-Barre syndrome, Multiple sclerosis, Neoplasm, spinal cord, spinal cord infection, neuromuscular and myopathic complication.

Treatment

Urgent surgery is usually the treatment of choice. Treatment of patients within 48 hours after the onset of the syndrome has a significant advantage in improving the sensory and motor function as well as the urinary and rectal (intestinal) function.

Outcome and follow-up

The patient received an initial dose of dexamethasone, 10mg, intravenously, followed by 4mg

intravenous dose every six hours. There was a muscle relaxant too. The patient made significant recovery After 72 hours. Back pain is relieved, the ability to walk

was restored, and impaired bladder function improved at follow-up. The patient was discharged while his physiotherapy and therapeutic sessions were scheduled.

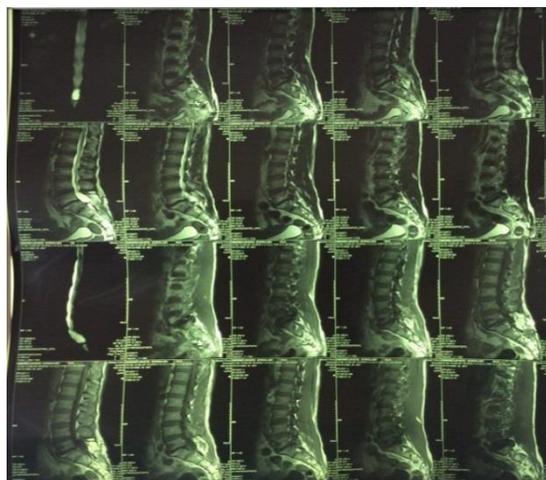


Fig-1: Lumbar spine shows a disc mild narrowing of the intervertebral disk spaces between L3-L4 and L4-L5 and showed herniated disk material located along the left lateral aspect of the vertebral canal

DISCUSSION

CES still remains a disease that is often neglected in emergency services, which entails considerable social and financial costs. Considering that CES is a rare condition, we were not able to establish statistic correlation between the analyzed variables and the outcomes of the disease[4].

Cauda equina syndrome is an uncommon but significant neurologic presentation due to a variety of underlying diseases. Anatomical compression of nerve roots, usually by a lumbar disk hernia is a common cause in the general population, while inflammatory, neoplastic, and ischemic causes have also been recognized. The data reof Fuso's study showed that the main etiology found was disc herniation 69%, followed by tumor 16% , trauma 10% and vascular 5% [5]. In the United States, approximately 1-3% of patients who undergo spinal surgery for CES have either atraumatic or traumatic types of CES. CES has no predilection for any race or either sex. Although CES can occur at any age, it is most often seen in adults in whom the spinal canal may already be compromised and stenosed.

It is evident that the onset of CES may be either acute within hours or gradual over weeks or months, and within these groups CES may be complete with painless incontinence or incomplete with some sphincter function.

In this case, Pre-operative MRI cross section view shows a huge L3-4 disc hernia in posterior with significant canal compromise in l4-l5 that is due to the appearance of hernia to the posterior and the region de compressed ponytail.

MRI cross section view shows the large posterior disk hernia between L3-L4 and Hernia of a large disk L4-L5. Studies show that Time interval between bladder and bowel dysfunction and admission to hospital varied from 1 to 35 days [6].

Contributors

All authors contributed to patient management and writing of the report. Written consent to publication was obtained

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