

Cauda Equina Syndrome Bowel Dysfunction

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Abstract

Cauda equina syndrome (CES) is a chronic Complication of lumbar spinal disorders; it results from compression of the nerve roots of the cauda equina. The purpose of this work was to assess the clinical usefulness of a classification scheme of CES based on certain factors including clinical symptoms, imaging signs, and electrophysiological findings.

Keywords: - *Cauda equina syndrome (CES), symptoms, signs, lumbar, spinal disorders*

INTRODUCTION

Cauda equina syndrome (CSE) is classically featured by the compression of the distal lumbar, sacral and coccygeal nerve roots at the deep end of the conus medullaris at the L1 and L2 vertebral level. Although this disease has a low incidence in the population, ranging from 1:33,000 to 1:100,000 inhabitants, its sequela still generate extreme public healthcare costs (Angus et al., 2015).

The clinical signs and peculiar features of the pathology are: severe back pain, often

accompanied by sciatica; saddle(joint)anesthesia; sphincter and sexual dysfunction; and lower limb weakness (Balasubramanian et al.,2010).The presence of all these signs simultaneously is not typically required for diagnosis(Cook et al.,2007). The clinical history and the neurological examination pave to the need for diagnostic confirmation through complementary exams such as computed tomography (CT) and the gold standard, magnetic resonance imaging (MRI).MRI is mandatory for

determining compression topography and etiology(Bin et al.,2009).

(See Figure: 1, 2)

Among the causes of compression, the following are majorly noteworthy: extruded disc herniation, tumor lesions, vertebral fractures, canal stenosis, infections, surgical manipulation, spinal anesthesia, ankylosing spondylitis, and

gunfire wounds (Downie et al., 2013). Some reports also indicated its onset after chiropractic manipulation (Bell et al., 2007).This is an orthopedic emergency and its treatment of choice continues to be surgical decompression, which, if performed as early as possible, decreases neurological damage and improves the prognosis (Domen et al., 2009).

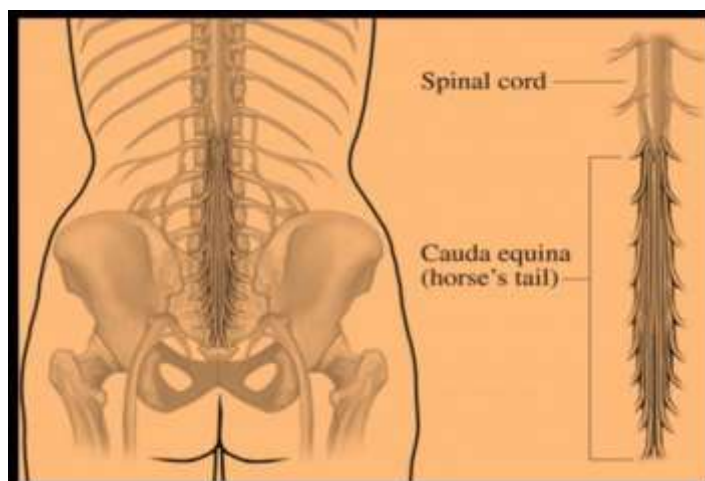


Fig: 1-Cauda equine (Horse tail appearance)

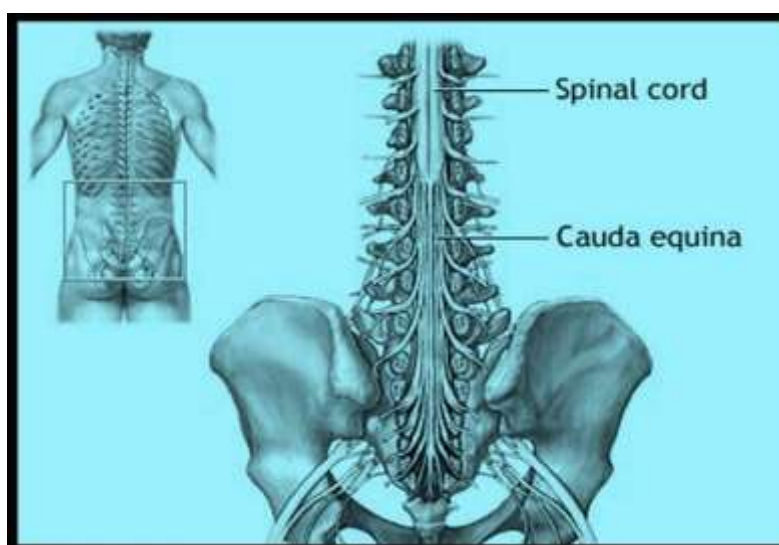


Fig: 2 –Cauda equina

Clinical Characteristics of CES

Cauda Equina Syndrome (CES) is a challenging phase to diagnose and manage. It may present at any time or in any setting and it is imperative that clinicians are able to quickly reason through their findings to manage the patient effectively (Fraser et al., 2009). There are many causes of CES, but the most common cause is that typically of a lumbar spine disc herniation and it occurs most frequently between the ages of 31–50 (Kebaish et al., 2005). Cauda equina compression usually occurs as a result of a disc prolapse, often at the L4/5 level (Harrop et al., 2004). Any space-occupying lesion, such as spinal stenosis, tumour, cysts, infection or bony ingress can narrow the spinal canal and cause compression of the cauda equine (Thongtrangan et al., 2004). In 1995, The Clinical Standards Advisory Group suggested that serious pathology comprised just 1% of all back pain, with CES being just one of the many serious conditions that can lead to back pain (Kostuik et al., 20004). Despite CES being estimated to have a very low prevalence, it is considered to be a main problem internationally and multiple National Guidelines for the management of low back pain refer to the importance of screening for CES (Cohen, 2004). It is key

to note that whilst the published evidence is that in the general population CES is rare, in an eighteen-month period in a Primary Care Interface service in the UK, 29 positive CES patients were managed as emergency cases and referred to a specialist spinal service, representing 3.6% of the service's patient population (Jensen, 2004). In 1996 the Office of National Statistics estimated that in the UK one CES patient will present annually for every 50,000 patients seen in primary care, the equivalent of 0.003 % (Morandi et al., 2004) these varying statistics appear to be contradictory; however, they can be explained by understanding the clinical context in which these patients were seen. The incidence of CES patients attending a particular medical setting mainly depends on the type of the medical service provided (Bartleson et al., 2013). Spinal surgeons will always see more CES patients than a GP, and physiotherapists will probably see a number in between depending where on the patient pathway they sit (Ozgen et al., 2004). Physiotherapists working at an advanced practice level are likely to see and assess more patients with CES as their patient population is likely to be more complex. Patients seeing advanced practitioners will often have had previously failed conservative intervention

or may have more serious health problems (Rubenstein et al., 1989).

Regardless of the healthcare setting or clinician, it is still pivotal to have a framework, which supports the early identification and management of patients with suspected CES (Flores et al., 1999). Timely diagnosis is predominant to avoid life-changing outcomes for patients; it is estimated that one fifth of patients will have a poor outcome, with on-going treatment for bladder, bowel and sexual dysfunction, along with key psychosocial consequences (Solheim et al., 2007).

The best and most widely availed model that currently exists to aid in the identification of CES is the system of Red Flags, although these previously considered cornerstones of safe practice have been called into question (Gleave et al., 2002). These systematic reviews and investigations have focused on the diagnostic accuracy of specific Red Flags. Due to the combined challenges of the relatively rare prevalence of serious pathology in the total back pain population, and the major difficulty in designing high quality studies in this area, the findings that most Red Flags are not good predictors of serious pathology, is quiet unsurprising(Theys et al.,2014). In

light of this, it would be fair to question the utility of current red flags for CES and to ask what we can do as treating physiotherapists to manage these patients (Sonntag, 2014). To answer this queries, it is useful to go back to basics and consider the clinical interaction between a physiotherapist and a patient arriving for their first appointment with a complaint of low back pain, whether it is 4pm on a Friday or first thing Monday morning(Chau et al.,2014). The physiotherapist needs to decide in a limited timeframe whether the patient's problem is typically suitable for physiotherapy management (keep), or whether the patient needs to be referred to other medical personnel or sent for further investigation (refer) and if so, in what time frame (emergency/soon/routine)(O'Laoire et al.,1981).

These are vital decisions to make, as CES can have permanent and chronic life changing consequences if not acted upon in a timely manner; in the UK the current guidance is that patients should be sent for an emergency MRI and surgical opinion on the same day (Bydon et al., 2014). The physiotherapist has a professional duty of care and a legal responsibility to garner appropriate and timely care. In cases of

suspected CES this duty is clearly to refer rather than to keep.

CLINICAL MANIFESTATIONS

If surgical intervention is delayed, irreversible damage mainly can occur to the bladder, bowel and sexual function with ongoing chronic pain (Hussain et al., 2013). Relevant symptoms which can be a precursor to CES are unilateral or bilateral radicular pain and/or dermatomal decreased sensation and/or myotomal weakness; if symptoms progress with any suggestion of changes in bladder or bowel function however minor, CES should be suspected (Chang et al., 2000). Emergency MRI must be carried out on the same day to confirm, to evaluate or negate CES. Clearly not all patients with back pain will develop a state called CES; consequently it is not necessary to warn all patients (Shephard.1959). Patients, who one suspect may have the potential to progress into CES, should be 'safety netted' with watchful waiting, rather than being immediately referred (Nater et al., 2015). Warning patients at risk is pivotal to early diagnosis; providing these at-risk patients with appropriate information of what to do should CES symptoms develop can expedite a timely surgical opinion (Shapiro et al., 2000).

Patients need to understand the relevance of their symptoms and of the questions being asked as they may not fully appreciate the importance and subsequent consequences if not explained fully (Kohles et al., 2004). It is also key that a patient's signs and symptoms are fully documented typically including the timing of examination findings so that there is a clear record of the patient's journey. There are no predictive signs or symptoms of who will progress through to what phases of CES, hence the value of accurate and timed/dated documentation (McCarthy et al., 2007).

CONCLUSION

CES is very rare but can have life changing consequences if not acted upon immediately when suspected. Physiotherapists can play a crucial role in bringing the patient and surgical team together in a timely manner. This paper discusses about different clinical manifestation of Caudus equine syndrome.

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