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Case report

Cervical Spondylotic Myelopathy presenting as mechanical neck pain: A case report

Benjamin E. Smith [a,*], Claire J. Diver [b], Alan J. Taylor [b]

[a] London Road Community Hospital (LRCH), Derby Hospitals NHS Foundation Trust, London Road, Derby DE1 2QY, UK
[b] University of Nottingham, UK

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ABSTRACT

Cervical Spondylotic Myelopathy (CSM) is the most common type of myelopathy in adults over 55 years of age. In the early stages symptoms may include local neck pain and stiffness that might mimic the presentation of non-specific mechanical neck pain (NSMNP).

The patient was a 79 year old male, who complained of eight weeks of neck pain. He had been referred for physiotherapy by his family physician with a diagnosis of NSMNP. Initial presentation was consistent with the referral, but further assessment by the physiotherapist revealed findings suggestive of CSM. He was referred for an urgent cervical MRI scan, which revealed myelomalacic changes at C3/4 due to spondylotic changes.

The patient was unsuitable for manual therapy intervention and was referred to a spinal orthopaedic surgeon who performed a posterior decompression and stabilisation at C3–C5, 2 months after the initial presentation.

This case report highlights the importance of considering CSM in adults over 55 years of age presenting with NSMNP, particularly as the prevalence of both increases with age. It demonstrates the need for health professionals to carry out detailed examination where CSM may be a potential differential diagnosis.

Outcomes are less favourable for patients over the age of 70, therefore an urgent surgical opinion was required for this patient. Deterioration of symptoms whilst he awaited surgery demonstrates how missed diagnosis may lead to possible long term spinal cord damage, with potential medico-legal concerns for the therapist.

1. Introduction

Cervical Spondylotic Myelopathy (CSM) is the most common type of myelopathy in adults over 55 years of age (Montgomery and Brower, 1992). The precise prevalence of CSM is unknown, but 60% of men over the age of 40 show spondylotic degenerative changes (Boden et al., 1990), and this increases to 95% over the age of 60 (Gore, 2001). The diagnosis of cervical myelopathy is challenging as it may present with a variety of symptoms. It is known that in the early stages these may include local neck pain and stiffness (Cook et al., 2009) that can mimic non-specific mechanical neck pain (NSMNP). As a consequence, there is a strong likelihood this type of patient may be referred for physiotherapy management.

NSMNP can be described as neck pain without specific underlying disease (Tsakitzidis and Remmen, 2013), and the 12 month prevalence in the UK population is 34% (Palmer et al., 2001). In Europe, 50% of patients with NSMNP are referred for physiotherapy assessment and treatment (Borghouts et al., 1999). Increasingly physiotherapists are required to be the primary point of contact (Moffett and McLean, 2006) and as such become key decision makers in the patient's journey.

CSM refers to the cascading effect of degenerative spondylotic changes of the spine, resulting in the direct compression of the spinal cord within the vertebral foramen. Loss of articular joint space is associated with osteophyte formation, plus hypertrophy and buckling of ligaments. Ventral overgrowth of osteophytes can compress the spinal cord ventrally, and buckling of the ligamentum flavum compresses the spinal cord dorsally. In addition, disc herniation or spondylolisthesis can cause spinal cord compression (Young, 2000; Toledano and Bartleson, 2013). Please see Fig. 1.

* Corresponding author. Tel.: +44 (0)1332 254631.
E-mail address: benjamin.smith3@nhs.net (B.E. Smith).

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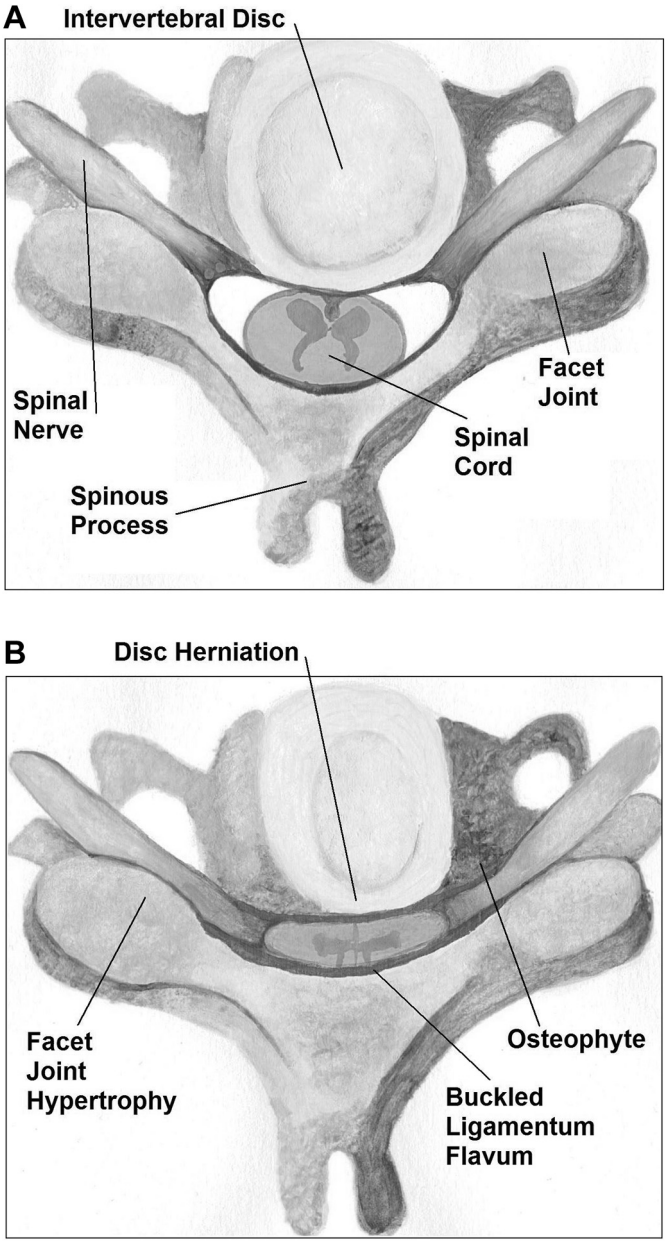

Fig. 1. (A) Axial view of normal cervical spine. (B) Axial view of cervical spine with cervical spondylotic myelopathy.

Spondylotic changes alone do not account for myelopathic changes within the spinal cord (Toledano and Bartleson, 2013). Predisposing factors associated with CSM include; Klippel–Feil syndrome, previous surgery, congenital fusions, Down syndrome and repeated trauma (Olive et al., 1988; Guille et al., 1995; Yoo and Origitano, 1998; Berge et al., 1999; Hilibrand et al., 1999; Bartolomei et al., 2005; Toledano and Bartleson, 2013), all of which, should raise the clinician's index of suspicion.

Signs and symptoms of CMS are variable, progressive and differ from patient to patient (Young, 2000; Toledano and Bartleson, 2013). Symptoms may include neck pain, reduced cervical range of movement, global muscle weakness, loss of fine motor control of the hands, unsteady gait, urgency of the bladder and bilateral or unilateral limb pain (Montgomery and Brower, 1992; Kadanka et al., 2000; Young, 2000; Bartleson and Gordon Deen, 2009; Toledano and Bartleson, 2013). Examination findings are consistent with upper motor neurone syndrome, including: hyperreflexia, global motor weakness, sensory loss, spasticity, gait disturbances, positive Hoffman's test, Clonus sign and extensor plantar response to the Babinski test (Montgomery and Brower, 1992; Kadanka et al., 2000; Young, 2000; Bartleson and Gordon Deen, 2009; Toledano and Bartleson, 2013).

Physiotherapists routinely assess patients whose primary complaint is neck pain alone. This case report highlights the importance of including CSM in differential diagnosis. Consideration of CSM in hypothesis generation and refinement requires knowledge of pathophysiology, clinical presentation and diagnostic testing. Failure to correctly diagnose a patient with CSM could place the patient at risk of severe disability and possible permanent spinal cord damage (Yoshimatsu et al., 2001).

The purpose of this case report is to increase clinicians' awareness of the signs and symptoms of CSM that can manifest as NSMNP, and describe the assessment and diagnostic process.

2. Case description

2.1. Patient history

The patient was a 79 year old retired male who complained of an eight week history of acute neck pain. He had not suffered previous neck complaints. There was no associated trauma and the symptoms developed insidiously over 2–3 days.

The patient complained of intermittent neck pain associated with movement in all directions and had initially sought the help of his family physician, who had arranged a cervical x-ray. The result showed "severe degenerative changes C4-T1", and the family physician referred him for physiotherapy with a diagnosis of 'mechanical neck pain'.

At the physiotherapy consultation the patient described being pain free at rest, but suffered lower neck pain, 5/10 on the visual analogue scale, associated with all movements. He reported no night pain and reported no upper or lower limb symptoms. He had hypertension and hypercholesterolaemia which were controlled with Amlodipine, Simvastatin and Aspirin.

On further questioning, the patient disclosed increasing episodes of "unsteadiness on his feet", though this was not associated with falls. He also reported loss of fine motor control of hands and fingers (bilaterally) affecting writing, eating and fastening buttons. He was unsure how long he had these symptoms for, but thought they predated the neck pain by several months. He wasn't concerned by the symptoms and had disregarded them as the normal ageing process, not linking them to his reported neck dysfunction.

There were no other neurological symptoms reported.

Table 1
Neurological examination findings.

Clinical test	Result left side	Result right side
Strength C3-T1	4/5	4/5
Strength L2-S2	5/5	5/5
UL Reflexes	3+	3+
LL Reflexes	3+	3+
Upper Limb Sensation	Reduced all finger tips	Reduced all finger tips
Lower Limb Sensation	Normal	Normal
Hoffman's	Positive	Positive
Babinski	No response	No response
Clonus	No response	5 beats

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