

Case report

Upper cervical instability associated with rheumatoid arthritis: What to 'know' and what to 'do'

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ABSTRACT

This case report describes a patient who presented with cervical spinal pain and headaches associated with atlanto-axial subluxation (AAS) secondary to rheumatoid arthritis (RA). For physiotherapists, especially less experienced clinicians, the significant risks associated with using manual assessment and treatment techniques in such a patient require careful consideration right at the start of a consultation. The focus of the case is therefore on the recognition of AAS in this patient with RA, highlighting the clinical findings that alert clinicians to this possibility and explaining the requisite knowledge and skills required to safely and effectively manage this patient. The use of screening tools to help clinicians identify possible RA in its pre-diagnosis stage and the clinical signs and symptoms that raise the index of suspicion for AAS, are discussed. The relevant contraindications and precautions associated with manual treatments directed at the upper cervical spine, and which may have potentially serious negative consequences, including quadriplegia and mortality, are addressed. Finally, the implications for the use of manual assessment and treatment of patients with RA and co-morbid AAS are addressed.

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1. Introduction

For physiotherapists using manual treatments in the assessment and management of patients with rheumatoid arthritis (RA), awareness and identification of potentially serious articular and peri-articular manifestations of the disease, including instability of the cervical spine, is essential. While there is a need for vigilance with respect to extra-articular manifestations of RA (see accompanying Professional Issue by Briggs et al., 2013), this paper focuses on the upper cervical spine. The most frequently occurring instability in the cervical spine is anterior atlanto-axial subluxation (AAS) (Wasserman et al., 2011; Yurube et al., 2012), where progressive loss of the primary and secondary ligamentous integrity combined with bony erosion of the odontoid process, associated with systemic inflammation as part of the RA disease process, can result in dire consequences, including quadriplegia or death (Paus et al., 2008; Wasserman et al., 2011). A high index of suspicion for AAS in patients with RA should alert clinicians to the potential risks associated with manual assessment and treatment and help ensure safe and

effective patient care. The following case report on a patient with RA and associated AAS takes a clinical practice focus, highlighting the importance of the requisite clinical knowledge, reasoning and skills required to guide appropriate assessment and management.

2. Case report

2.1. Clinical history

A 55 year-old female with a 35-year history of seropositive RA was referred to physiotherapy for assessment and management of persistent, bilateral neck pain and headaches (Fig. 1).

The neck pain radiated bilaterally from the suboccipital area to occipital and parietal areas, with occasional shooting pain to both temples. She described hearing "clanking" and "crunching" sounds in her neck, mainly on neck flexion or extension. The pain had been present for five years, with recurrent episodes of increased neck pain associated with increased bilateral suboccipital/occipital and parietal headaches. The neck pain and headaches had noticeably worsened in the past two years and coincided with a change in her occupational duties, which involved increased computer work requiring more sustained postural demands and more frequent and repeated flexion/extension movements of the head and neck. Pain was rated as moderately severe (average visual analogue scale

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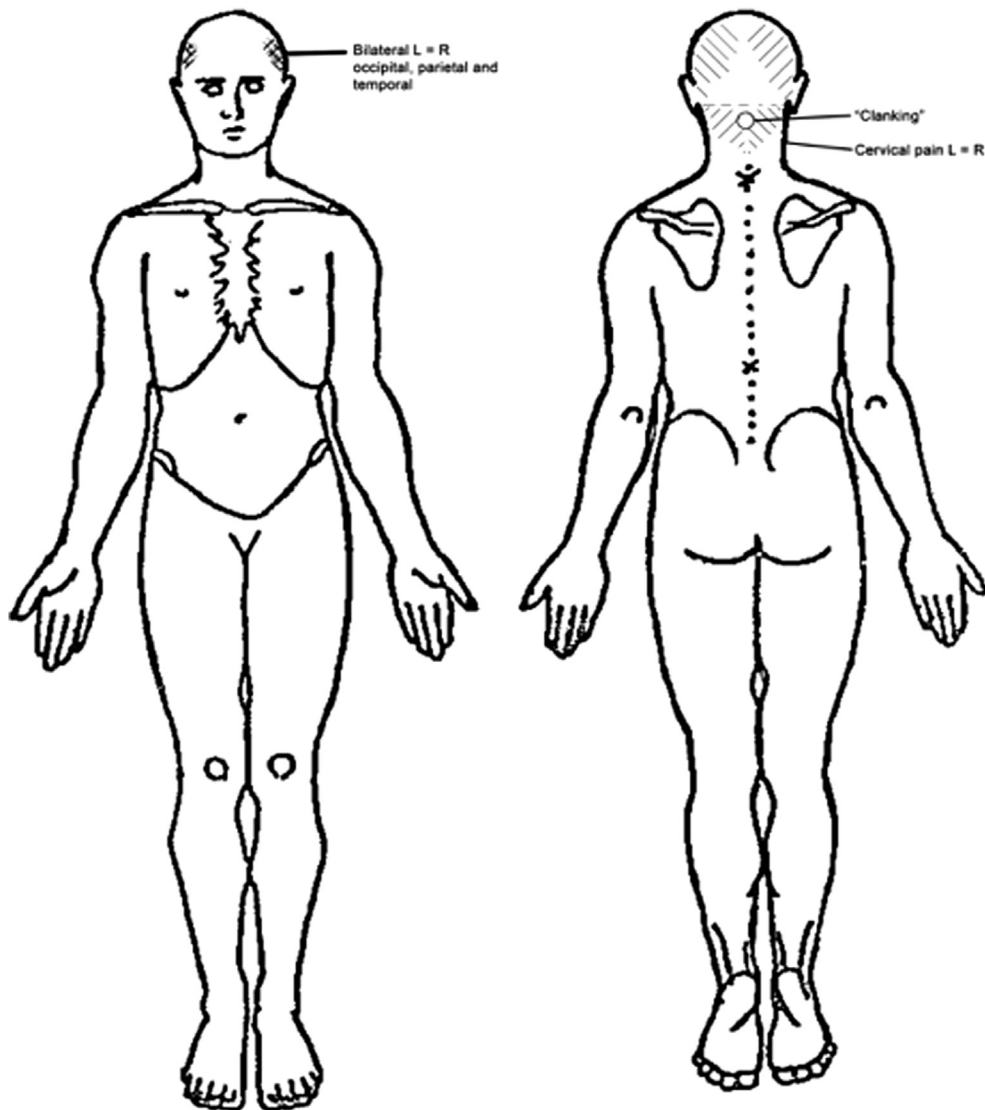


Fig. 1. The location of the patient's reported neck pain and headaches are shown in this body chart. Note that the patient's widespread rheumatoid arthritis-associated joint involvement and osteoarthritis are not mapped on this chart, indicating an effective treat-to-target approach, consistent with the current best practice for management of rheumatoid arthritis.

(VAS) 4–6 over 24 h) and irritability varied with workload, from moderate to low. Considered over a 24-h period, her neck pain and headaches worsened in the afternoons and improved in the mornings and on non-working days, consistent with sustained postures associated with computer work. She had not had any prior physiotherapy for her neck pain and headaches, relying primarily on simple analgesia and regular exercise (walking and tai chi).

She denied experiencing any vertebrobasilar insufficiency (VBI) symptoms, or dysaesthesiae of her lips or tongue, although she reported transient paraesthesia of her left foot and left distal arm, which were not behaviourally linked to her neck pain and headaches and usually resolved quickly, once she had adjusted her head and neck posture. There was no gait disturbance, upper or lower limb weakness, or change in bowel or bladder function to suggest cauda equina syndrome. Her RA was well controlled with a combination of disease-modifying anti-rheumatic drugs (DMARDs). Her medical history is summarised in Table 1.

Based on her description of the neck “clanking”, and prior to her physiotherapy consultation, she had been referred by her rheumatologist for plain radiographs and magnetic resonance imaging (MRI) of the cervical spine. Plain radiographs revealed erosion of

the odontoid peg, and 5 mm anterior subluxation of C1 on C2 on flexion (Fig. 2a), which reduced to normal (≤ 3 mm) with cervical extension (Fig. 2b). MRI of the cervical spine revealed advanced arthropathy at the articulation between the lateral masses of C1 and C2 on the left, associated with marrow oedema. There was no evidence of cervical cord compression or an intrinsic spinal cord signal abnormality.

2.2. Physical examination

Examination of the cervical spine revealed a loss of the normal cervical lordosis. Active cervical ranges were limited globally and associated with crepitus through range and end range pain: extension to approximately 10° with restriction throughout the entire cervical spine; flexion was limited to 30° , occurred primarily in the upper cervical spine and was associated with an audible ‘clunk’ that was reproducible and not associated with any transient cord symptoms or signs; lateral flexion and rotation were restricted bilaterally to approximately 30° . At rest, paraspinal cervical muscle overactivity was evident bilaterally, primarily in the suboccipital region and the sternocleidomastoid muscles. Examination of the

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