



Case report

The stiff shoulder; A case study

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ABSTRACT

Clinicians working in outpatient departments and advanced practitioner clinics frequently encounter patients presenting with multidirectional stiffness of the glenohumeral joint.

This case report describes the assessment and treatment of a patient presenting with glenohumeral joint stiffness and describes the possible differential diagnoses. The evidence base used to inform the decision-making process is presented and the use of radiology that helped to ultimately establish the diagnosis is discussed. The clinical reasoning process of applying knowledge and experience to identify patient problems and to make appropriate decisions that result in positive patient outcomes is discussed.

The case report highlights the importance of early diagnosis.

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1. Introduction

This case report charts the assessment and treatment of a patient who presented to an advanced practitioner NHS clinic describing pain and stiffness of the left shoulder and neck. The purpose of this case study is to explore the differential diagnoses of this presentation and to highlight unnecessary delays in the diagnosis of this patient's condition. The implications of delayed diagnosis will be discussed.

2. History of present condition

This 46-year-old man was referred to the Advanced Practitioner physiotherapy clinic in December 2013 by his general practitioner (GP). The referral letter described a 4-year history of left sided neck pain, shoulder pain and paraesthesia in both arms. In addition the letter described several episodes of conservative treatment that had failed to resolve the neck and shoulder symptoms. A family history of chronic pain was described. Specifically, the patient's brother used a wheelchair to mobilise due to 'back problems' and the referral described that the patient had expressed fear of developing spinal symptoms of similar severity.

During the consultation the patient described relatively mild neck pain and severe shoulder pain (Fig. 1). Subjectively, the neck

pain was provoked by prolonged sitting, cervical rotation and extension. These movements did not provoke shoulder pain. The shoulder pain was provoked by shoulder elevation and hand-behind-back movements. Although the symptoms had begun at approximately the same time, there did not appear to be a relationship based on subjective aggravating activities. The patient did confirm the presence of occasional paraesthesia in the hands, but could not describe any aggravating activities for these symptoms. All symptoms were unchanged in severity and frequency over the last four years.

He had self-referred to a chiropractic clinic, once in 2010 and again in 2013. In 2010 he attended on twelve occasions and was given a diagnosis of 'frozen shoulder'. On the second occasion he attended for 20 sessions and was diagnosed again with 'frozen shoulder,' but also a 'pinched nerve in the neck'. Over the treatment period his symptoms had not significantly improved on either occasion.

The patient made it very clear during the subjective examination that his main concern was the severe pain in his left shoulder.

3. Past medical history

The patient's past medical included essential hypertension, a history of alcohol misuse, multiple soft tissue injuries, fractures to the hands and a dislocation of the left shoulder approximately 15 years previously. The dislocation occurred following a fall. The patient was vague regarding the exact nature of the injury. There was no information in the medical notes regarding the previous

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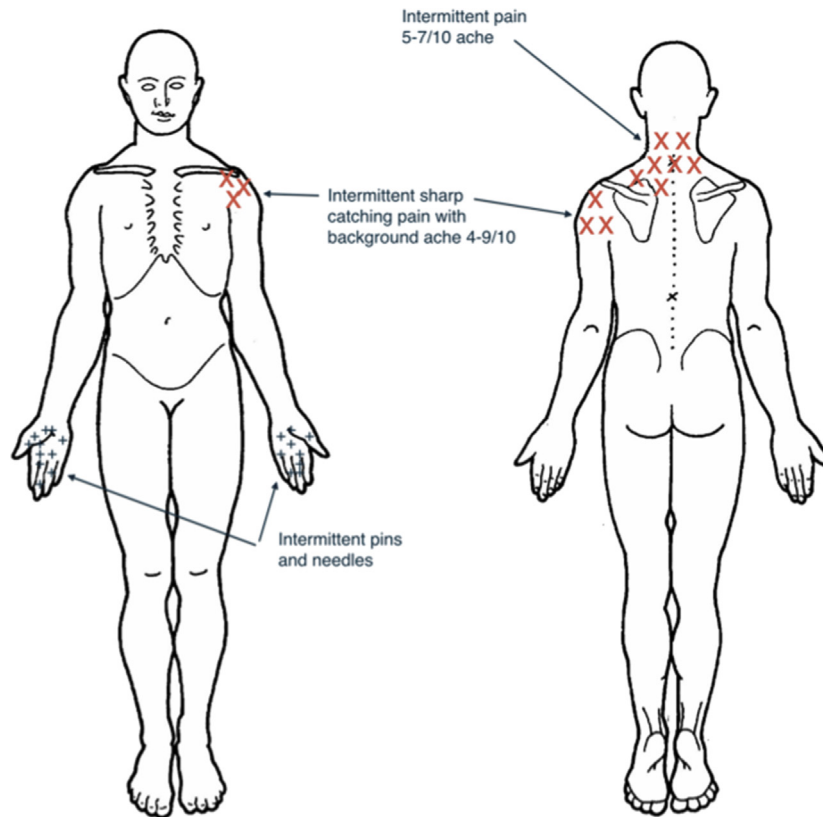


Fig. 1. Body chart of symptoms described by the patient.

dislocation, and the patient was unsure as to how this diagnosis was established. He was certain that there had been no recurrent dislocations and that he had been pain-free with full shoulder function for over 10 years prior to the onset of his current episode. His GP had performed blood screening prior to referral.

3.1. Clinical reasoning prior to physical examination

3.1.1. Shoulder pain

Prior to the physical examination the main diagnostic hypotheses were based on the information from the referral letter and the subjective examination. The mechanical aggravating activities and site of pain suggested two separate sources of pain relating to the cervical spine and glenohumeral joint. Alternative hypotheses such as visceral referral from the liver seemed less likely as the patient reported alcohol consumption was minimal at the present time. Recent blood screening included AST and ALT, which were within normal limits. The liver commonly refers to the right upper quadrant (Cartwright and Knudson, 2008), not the left as in this case.

3.1.2. Paraesthesia

The symptoms of bilateral paraesthesia in the hands in combination with neck and shoulder pain raised the possibility of cervical radiculopathy as a diagnosis that might explain all symptoms. The paraesthesia however was bilateral, occasional and appeared non-mechanical in nature. The GP had performed blood tests including B12, ferritin and folate, which had returned normal. Vitamin B12 deficiency can result in paresthesia, peripheral neuropathy, and demyelination of the corticospinal tract and dorsal columns (Robert and Brown, 2003). The possibility of alcoholic sensory neuropathy was considered as chronic ethanol exposure can cause polyneuropathy characterized by axonal degeneration (Mellion et al.,

2011). Recent studies have shown that ethanol exposure has direct neurotoxic effects on peripheral nerves. Symptoms, however, normally manifest initially in the distal lower extremities and not the upper extremities as in this case (Laker and Sullivan, 2013).

4. Examination findings

On physical examination, upper limb neurology was normal for sensation and reflexes. Power was reduced at the shoulder and elbow. Both were associated with the provocation of shoulder pain (4/5). Power was normal in the hand and wrist (5/5). There was a minimal restriction of cervical range of movement in extension and rotation bilaterally. Cervical flexion and side flexion bilaterally were unrestricted. The restricted cervical movements were limited by mild/moderate pain in the base of the cervical spine. The pain reproduced was mild and transient, so overpressures were added to all cervical movements in an attempt to provoke symptoms in the left shoulder or hands, so as to provide evidence of a common source of all symptoms. Overpressures did not reproduce shoulder pain or paresthesia in the upper limbs.

Shoulder physiological movements revealed a restriction of shoulder range with a sharp catching arc of pain at approximately 90-degrees through flexion and abduction. Range of movement was restricted by pain and stiffness at 135° of flexion and abduction. Overpressure revealed a hard end feel. Hand-behind-back was restricted to the mid-buttock and lateral rotation was restricted to 30° on the left and 70-degrees on the right. Passive and active movements of the shoulder were equally restricted.

Neurodynamic testing with median nerve bias (ULTT 2a) and radial nerve bias (ULTT 2b) were negative and palpation of the median and radial nerve trunks at the elbow and radial groove respectively were non tender.

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