

LITERATURE REVIEWS

A SYSTEMATIC REVIEW OF MANIPULATIVE THERAPY FOR THE TREATMENT OF SHOULDER PAIN

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ABSTRACT

Objective: The purpose of this systematic review is to discuss the evidence for manipulative methods of management of shoulder pain and chiropractic management techniques used within the literature.

Methods: A literature search of MEDLINE, CINAHL, MANTIS, the Cochrane Musculoskeletal Group trials register and the Cochrane Controlled Trials Register was conducted. Search terms included chiropractic or manipulative therapy and shoulder pain, impingement, rotator cuff, shoulder instability, shoulder joint, treatment or rehabilitation exercises. Publications were included if they contained shoulder pain or contained a specific clinical diagnosis of a shoulder pain syndrome in the title; a detailed description of the treatment intervention which was typical of the profession; treatment performed by a registered practitioner and outcome measures were included in the studies. Exclusion criteria included the diagnosis of adhesive capsulitis or referred/pathological pain. The articles were reviewed and clinical trials ranked on the Physiotherapy Evidence Database scale.

Results: From a total of 913 retrieved publications, 22 case reports, 4 case series and 4 randomized, controlled trials met the inclusion and exclusion criteria for this review.

Conclusions: The literature contains 2 articles of reasonably sound methodology. The evidence for chiropractic management of shoulder pain is limited to low level evidence in the form of case reports and case series and 1 small controlled trial. There is a need for more well-designed, trials investigating multi-modal chiropractic management for shoulder pain. (*J Manipulative Physiol Ther* 2010;33:679-689)

Key Indexing Terms: *Shoulder; Pain; Chiropractic; Musculoskeletal manipulation; Physiotherapy; Subacromial impingement syndrome*

In Australia, shoulder pain presentations are the third most common musculoskeletal reason for presenting to general practice.¹ The clinical definition of the various problems embraced by the term “shoulder pain” is controversial and diagnostic criteria for defining these disorders are not consistently nor reliably applied. Based on such diversity, the selection of a single and reasonable definition of shoulder pain is important.² For the purposes

of this review “shoulder pain” is characterized by the presence of pain in the anterior, lateral or posterior aspects of the shoulder including the low cervical spine and shoulder blade region (Fig 1). This type of definition has been cited in the literature and is recommended for use in epidemiological and shoulder related clinical studies.^{3,4}

Rotator cuff tendinopathy is the most frequent cause of shoulder pain, with subacromial impingement syndrome (SIS) a common diagnosis for patients who present with a painful shoulder.^{1-3,5} For the clinician it is important to differentiate SIS from other disorders that have the potential to cause shoulder pain such as glenohumeral osteoarthritis, calcific tendinitis, instability, adhesive capsulitis, acromioclavicular joint lesions, cervical radicular symptoms, and peripheral neuropathies.

The primary treatment for shoulder pain and SIS is initially conservative, which encapsulates a broad spectrum of therapeutics including rest, non-steroidal anti-inflammatory drugs (NSAIDs and analgesics), corticosteroid injections, and physiotherapy. According to the guidelines for the treatment of shoulder disorders published by the Dutch College of General Practitioners, for patients that do not

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Paper submitted April 16, 2010; in revised form June 12, 2010; accepted July 6, 2010.

0161-4754/\$36.00

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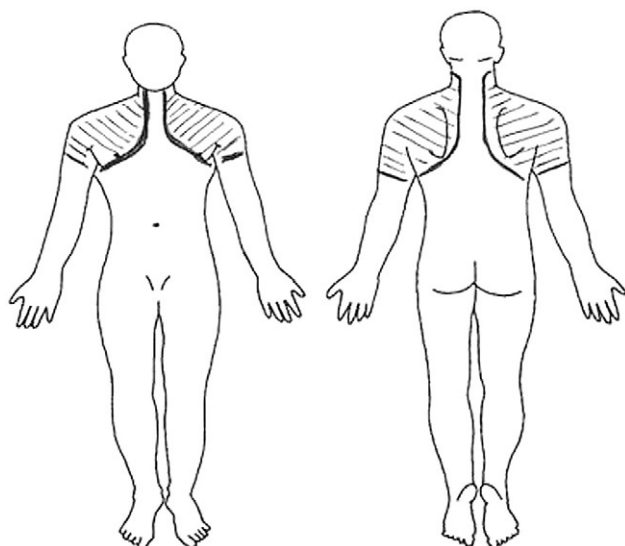


Fig 1. Shoulder pain is characterized by the presence of pain in the anterior, lateral or posterior aspects of the shoulder including the low cervical spine and shoulder blade region.

respond sufficiently to conservative non-operative measures, orthopedic evaluation may be necessary, with potential for surgical subacromial decompression.^{6,7}

When considering the medical and physiotherapy professions there is an extensive amount of research investigating various approaches used by those professions in managing shoulder related disorders and pain.⁸⁻¹⁵ In medical literature, the efficacies of medication and steroid injections for shoulder pain have only been demonstrated in the short term and may be beneficial as a first line of attack.¹⁶ In physiotherapy, Koes et al¹⁷ reports the classic approach to treating muscular disorders is by massage, electro modalities and exercises, and the bulk of publications use such an approach.¹²⁻¹⁵

In the United States, physiotherapy is still considered the mainstay of upper limb and shoulder management, with more than 50% of patients diagnosed by a general practitioner with rotator cuff tendinopathy, referred to a physiotherapist for treatment and management.¹ However, in a recent Cochrane review of clinical trials for physiotherapy interventions for shoulder pain, the authors state that there is little overall evidence to guide such treatment, mainly due to the methodological quality of the trials reviewed, although some evidence does exist for certain interventions.¹⁸ The authors state that there is a need for further research into specific conditions associated with shoulder pain, shoulder pain with combinations of therapeutics utilized (multimodal interventions), and studies that employ good methodology based upon Physiotherapy Evidence Database (PEDro)¹⁹ and the Consolidated Standards of Reporting Trials (CONSORT) criteria.²⁰

In contrast, the chiropractic profession is not traditionally recognized as having the expertise and knowledge to manage

disorders of the shoulder, despite studying these concepts as a part of undergraduate education.²¹ The chiropractic profession as a whole is often perceived as practitioners of the spine. Unfortunately, very little research has been directed at the third most prevalent musculoskeletal complaint in the chiropractic office, namely, shoulder pain.²²⁻²⁴ In addition, a survey of 192 chiropractors in New South Wales, Australia, reported that shoulder pain and/or symptoms were responsible for 12% of total weekly visits to chiropractors.²⁵ This same study demonstrated that 83% of practitioners use peripheral joint manipulative therapy techniques as an adjunct to spinal manipulative care.

The scope of chiropractic care has a strong musculoskeletal base incorporating spine and extremity joint management for shoulder pain presentations.²² In the literature there is a strong correlation between dysfunction of the cervicothoracic spine and adjacent ribs, whereby reduced mobility has been positively associated with shoulder pain in 84% of cases and persons with reduced mobility have been associated with a 3-fold risk of developing shoulder pain.^{26,27} Crosbie et al²⁸ presented motion interactions of the spinal segments and humeral and scapula articulations. According to the authors, a limitation of thoracic motion is associated with a functional restriction of glenohumeral movement. Sobel et al²⁹ suggested the inclusion of treatment of the upper thoracic spine, cervical spine and adjacent rib articulations when managing patients with shoulder complaints, whilst a recent paper demonstrated a clinical prediction rule for the treatment of the cervicothoracic junction for shoulder pain is reliable.³⁰ It is likely that management of both spinal and shoulder regions would promote successful patient outcomes beyond singular approaches alone.

The aim of this article was to review the evidence for manipulative therapy and chiropractic treatment of the shoulder, and to discuss the characteristics of chiropractic treatment that has been demonstrated to be effective.

METHODS

A search strategy was initiated on 5 electronic databases; MEDLINE (1985-current), CINAHL (1985-current), MANTIS (1985-current) with further from searches from the Cochrane Musculoskeletal Group trials register and Cochrane Controlled Trials Register. The following key words were used as part of the search strategy: chiropractic AND shoulder pain, manipulative therapy AND shoulder pain. Chiropractic was also searched with MeSH terms for the shoulder that included various combinations of chiropractic/physiotherapy AND shoulder pain or impingement or rotator cuff or shoulder instability or shoulder joint or treatment or rehabilitation exercises. Limits were set to English language and abstract/title. Manual searches of the reference section of each

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