



The Efficacy of Manual Therapy Techniques in the Management of Frozen Shoulder: A Systematic Review and Meta-analysis

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Abstract:

Frozen shoulder, also known as adhesive capsulitis, is a common musculoskeletal condition characterized by pain, stiffness, and limited range of motion in the shoulder joint. Physiotherapy interventions, including manual therapy techniques, are frequently used in the management of frozen shoulder. This systematic review aims to evaluate the efficacy of manual therapy techniques in reducing pain, improving range of motion, and enhancing functional outcomes in patients with frozen shoulder.

Keywords: Frozen Shoulder, Adhesive capsulitis, Bursitis, goniometer (ROM)

Introduction:

Frozen shoulder is a debilitating condition that affects a significant portion of the population, particularly middle-aged individuals. Physiotherapy plays a crucial role in the conservative management of frozen shoulder, with manual therapy techniques being widely employed. However, the effectiveness of these techniques remains uncertain due to the lack of comprehensive evidence. This systematic review aims to address this gap by synthesizing the available literature on the topic.

Frozen shoulder, also known as adhesive capsulitis, is a condition characterized by pain and stiffness in the shoulder joint. It typically occurs due to inflammation and thickening of the shoulder capsule, leading to restricted movement and functional limitations. This case study aims to explore the presentation, diagnosis, treatment, and outcomes of a patient with frozen shoulder.

Aim of work:

The patient, a 45-year-old male, presented with a complaint of severe pain and limited range of motion in his left shoulder. He reported no specific injury or trauma but mentioned that the symptoms had gradually worsened over the past six months. The pain was constant, especially at night, and affected his ability to perform daily activities such as dressing, reaching overhead, and sleeping comfortably.

Most patients are initially prescribed a course of physiotherapy. The aim behind most regimens is to prevent further reduction in range of motion and eventually to increase the range of motion in the affected shoulder. Passive mobilization and capsular stretching are two of the most commonly used techniques. Despite the near universal use of physiotherapy as a first line treatment for frozen shoulder there is very little high quality evidence to support its use. Cochrane reviews have demonstrated that the current literature base shows that physiotherapy alone has little to no benefit as compared to control groups [39]. There are a number of adjuncts that are often used with physiotherapy including extracorporeal shockwave therapy, electromagnetic stimulation, acupuncture and the use of lasers, none of which have been subjected to investigation with randomized controlled studies.

Diagnosis-

After a thorough physical examination, including range of motion assessment and palpation, the patient was diagnosed with frozen shoulder. X-rays were taken to rule out any underlying structural abnormalities or fractures. The imaging results were normal, confirming the diagnosis of adhesive capsulitis.

Goniometer (ROM)-

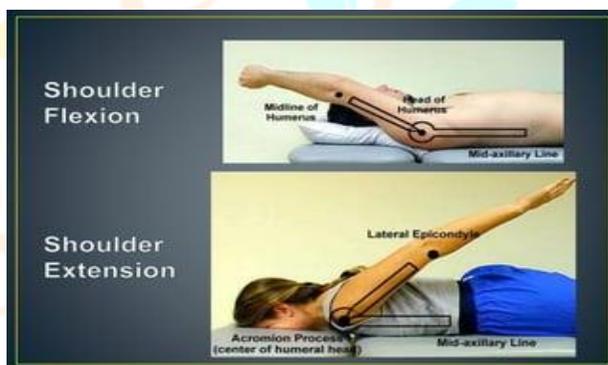


Fig:1 goniometry (ROM) Flexion & Extension

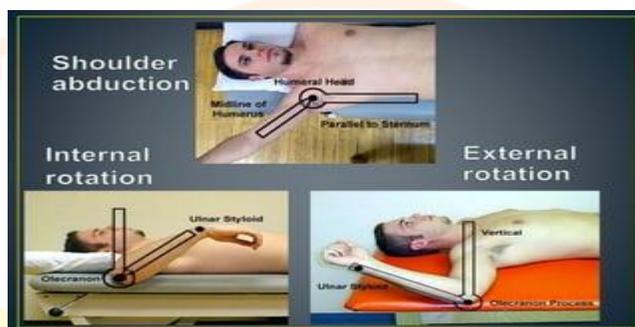


Fig :2(Abduction, internal rotation, external rotation) goniometry

Investigation-



Fig: 3 (X-ray Shoulder joint)



Fig:4(shows –adhesive capsulitis)

Treatment-

Physiotherapy treatment for frozen shoulder typically involves a combination of exercises, manual therapy, and pain management techniques. The goal of physiotherapy is to improve the range of motion and reduce pain in the shoulder joint.

Range of Motion Exercises:

The physiotherapist will guide the patient through a series of exercises to gradually increase the range of motion in the shoulder joint. These may include pendulum exercises, wand exercises, and passive stretching.

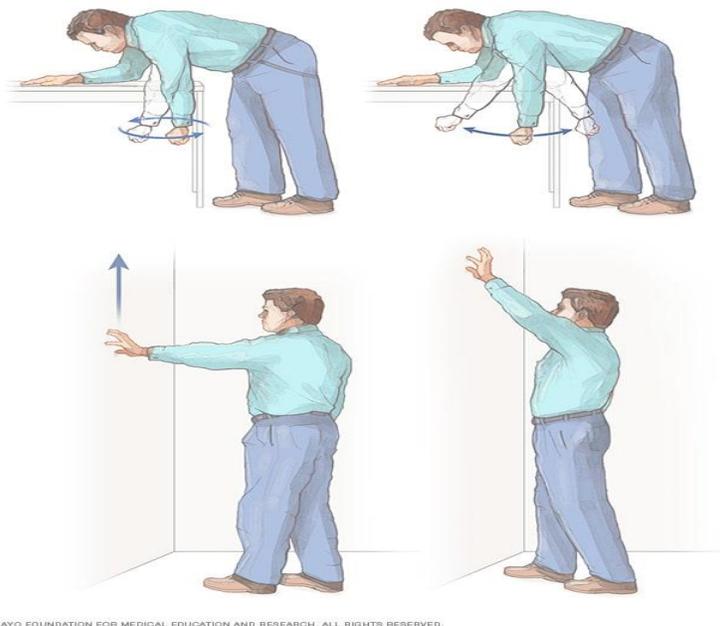


Fig:5 (Pendulum ex's, ROM ex;s)

Strengthening Exercises:

As the range of motion improves, the physiotherapist will introduce strengthening exercises to improve the stability and strength of the shoulder muscles. These exercises may include resistance band exercises, shoulder presses, and scapular stabilization exercises.



Fig :6 (Theraband Strengthening ex's)

Mobilization (mulligan concept): The physiotherapist may use manual therapy techniques such as joint mobilization (movement with mobilization), soft tissue massage, and stretching to help improve the mobility of the shoulder joint and reduce pain.

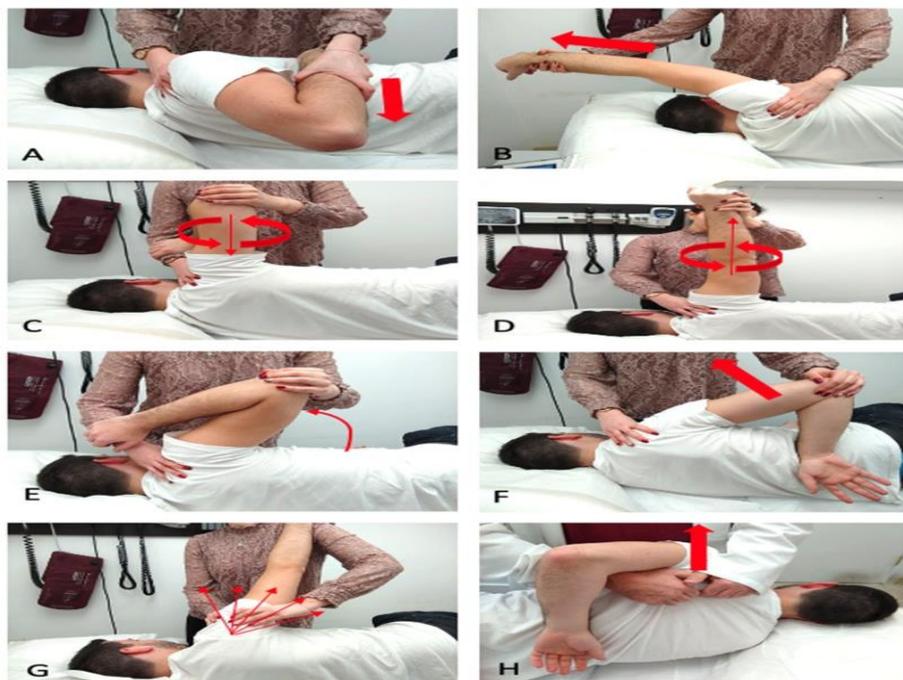


Fig: 7 Movement with mobilization(MWM) Mulligan concept

Pain Management Techniques:

Physiotherapists may use various pain management techniques such as heat or cold therapy, transcutaneous electrical nerve stimulation (TENS), or ultrasound to help reduce pain and inflammation in the shoulder joint.

Education and Home Exercises:

The physiotherapist will educate the patient about the condition and provide them with a home exercise program to continue the progress made during the physiotherapy sessions. Consistency with home exercises is crucial for optimal recovery & cold pack apply (regular interval) for 15-20min.

“It is important to note that the treatment plan may vary depending on the severity of the frozen shoulder and the individual patient's needs. Physiotherapy treatment for frozen shoulder is typically a gradual process that may take several weeks or months to achieve full recovery”.

Methods-

A comprehensive search of electronic databases (e.g., PubMed, Embase, Cochrane Library) will be conducted to identify relevant studies published between 2000 and 2022. Only randomized controlled trials (RCTs) evaluating the efficacy of manual therapy techniques (e.g., joint mobilization, soft tissue mobilization, stretching exercises) in patients with frozen shoulder will be included. Studies involving participants of all ages, genders, and stages of frozen shoulder will be considered. The primary outcomes of interest will include pain levels, range of motion, and functional outcomes. Secondary outcomes will include patient satisfaction, adverse events, and treatment duration.

Results-

Data from eligible studies will be extracted and analyzed using appropriate statistical methods. A meta-analysis will be conducted if feasible, and the quality of evidence will be assessed using the Cochrane risk of bias tool. Subgroup analyses will be performed based on the type and duration of manual therapy techniques, as well as the stage of frozen shoulder.

Discussion-

This systematic review and meta-analysis will provide an up-to-date and comprehensive synthesis of the available evidence on the efficacy of manual therapy techniques in the management of frozen shoulder. The findings will help guide physiotherapists in selecting appropriate interventions for patients with frozen shoulder, ultimately improving treatment outcomes and patient satisfaction.

Conclusion-

By evaluating the efficacy of manual therapy techniques in reducing pain, improving range of motion, and enhancing functional outcomes in patients with frozen shoulder, this systematic review and meta-analysis will contribute to the existing body of knowledge in physiotherapy.

References-

1. Duplay E. De la periarthrite scapulo-humérale et des raideurs de l'épaule qui en sont la conséquence. *Arch Gen Med.* 1872;20:513–542. [Google Scholar]
2. Codman EA. Tendinitis of the Short Rotators. In: *The Shoulder: Rupture of the Supraspinatus Tendon and Other Lesions in or about the Subacromial Bursa.* Boston MA: Thomas Todd; 1934. [Google Scholar]
3. Robinson CM, Seah KT, Chee YH, Hindle P, Murray IR. Frozen shoulder. *J Bone Joint Surg Br.* 2012;94:1–9. [PubMed] [Google Scholar]
4. Manske RC, Prohaska D. Diagnosis and management of adhesive capsulitis. *Curr Rev Musculoskelet Med.* 2008;1:180–189. [PMC free article] [PubMed] [Google Scholar]
5. van der Windt DA, Koes BW, de Jong BA, Bouter LM. Shoulder disorders in general practice: incidence, patient characteristics, and management. *Ann Rheum Dis.* 1995;54:959–964. [PMC free article] [PubMed] [Google Scholar]

6. Smith CD, Hamer P, Bunker TD. Arthroscopic capsular release for idiopathic frozen shoulder with intra-articular injection and a controlled manipulation. *Ann R Coll Surg Engl.* 2014;96:55–60. [PMC free article] [PubMed] [Google Scholar]
7. Lundberg BJ. The frozen shoulder. Clinical and radiographical observations. The effect of manipulation under general anesthesia. Structure and glycosaminoglycan content of the joint capsule. Local bone metabolism. *Acta Orthop Scand Suppl.* 1969;119:1–59. [PubMed] [Google Scholar]
8. Tighe CB, Oakley WS. The prevalence of a diabetic condition and adhesive capsulitis of the shoulder. *South Med J.* 2008;101:591–595. [PubMed] [Google Scholar]
9. Hand GC, Athanasou NA, Matthews T, Carr AJ. The pathology of frozen shoulder. *J Bone Joint Surg Br.* 2007;89:928–932. [PubMed] [Google Scholar]
10. Bunker TD, Anthony PP. The pathology of frozen shoulder. A Dupuytren-like disease. *J Bone Joint Surg Br.* 1995;77:677–683. [PubMed] [Google Scholar]
11. Hutchinson JW, Tierney GM, Parsons SL, Davis TR. Dupuytren's disease and frozen shoulder induced by treatment with a matrix metalloproteinase inhibitor. *J Bone Joint Surg Br.* 1998;80:907–908. [PubMed] [Google Scholar]
12. Gerber C, Werner CM, Macy JC, Jacob HA, Nyffeler RW. Effect of selective capsulorrhaphy on the passive range of motion of the glenohumeral joint. *J Bone Joint Surg Am.* 2003;85-A:48–55. [PubMed] [Google Scholar]
13. Neviasser RJ, Neviasser TJ. The frozen shoulder. Diagnosis and management. *Clin Orthop Relat Res.* 1987;(223):59–64. [PubMed] [Google Scholar]
14. Hsu JE, Anakwenze OA, Warrender WJ, Abboud JA. Current review of adhesive capsulitis. *J Shoulder Elbow Surg.* 2011;20:502–514. [PubMed] [Google Scholar]
15. Liem D, Alci S, Dedy N, Steinbeck J, Marquardt B, Möllenhoff G. Clinical and structural results of partial supraspinatus tears treated by subacromial decompression without repair. *Knee Surg Sports Traumatol Arthrosc.* 2008;16:967–972. [PubMed] [Google Scholar]

