

Impact Of MET On Infrapinatus Muscle To Reduce Tightness And Pain, To Improve Lateral Rotation In Patient

With Adhesives Capsulitis

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ABSTRACT:-

Background:- The Glenohumeral Joint Stiffness (Frozen Shoulder) is due to non contractile elements until active and passive motion are painful. Usually restricted is the passive motion of lateral rotation.

Case Presentation :- A 39 years old man has difficulty combing his hair. He has reduced joint range of motion, muscle tightness, difficulty in performing daily activities and pain in his left shoulder. The MRI clinical findings showed changes in the partial thickness of the rotator cuff and the adhesive capsulitis.

Interventions :- To improve Rom and reduce joint pain patient completed 4 weeks of physiotherapy program which included MET exercises.

Result:- Less pain (VAS 3-10) I am also working on improving the patient's lateral rotation (60-80) and ability to perform activities of daily living.

Conclusion:- The patient with adhesive capsulitis after four weeks of physical therapy showed a significant improvement of joint rotation and lateral rotation.

Keywords:- Internal Rotation, Manual Muscle Testing, Muscle Energy Technique, Range of Motion, Adhesive Capsulitis, Numerical Pain Rating Scale, Visual Analog Scale.

BACKGROUND:-

The glenohumeral joint stiffness known as "frozen shoulder" is caused by a Non contractile element until both active and passive motion are painful and restricted passive mobility is limited in the capsular pattern with the most limited internal rotation (IR) and external rotation. Diabetics are more likely to have this disease, which has an unknown aetiology and a history of preceding trauma.

Diabetes is 10–35% more common in women than in men, with a mean age of 40–60% years and a bilateral incidence of 12%. Adults between the ages of 30 and 70 have a prevalence of shoulder pain of 22.9%, with 17.96% reporting pain in both shoulders.

The prevalence of frozen shoulder is 2 to 5% of the population, and it is more common in women. The Greater and Lesser Tubercles of the Humerus are connected to every muscle at the upper end of the scapula. The medial two-thirds of the scapula's infrapinatus fossa are where the infrapinatus muscle originates. Additionally, it inserts from the middle impression on the greater tubercle of the humerus.

The infraspinatus muscle, innervated by the suprascapular nerve (C 5, C 6), laterally rotates the arm. The arm is rotated medially and laterally to help in separating the head of the humerus from the shallow glenoid cavity. The glenohumeral joint is the shallow concavity of the glenoid fossa of the scapula and the head of the humerus .

At this point the large head of the humerus meets the smaller glenoid fossa . The current glenohumeral ligaments are the superior, inferior, middle and coracohumeral ligaments. limited range of movement in both active and passive shoulders. The patient has trouble turning their hair to the side, making it impossible for them to do their daily tasks.

The shoulder X-ray is usually normal, but sclerosis may sometimes be seen on the lateral aspect of the greater tuberosity. MRI and ultrasound findings such as thickened coracohumeral ligament capsule.

Treatment includes analgesics, heat therapy, intra-articular injections and physiotherapy modalities like ultrasound, icing, SWD, pendulum exercises, stretching and strengthening exercises. To investigate the efficacy of the muscle energy technique in enhancing lateral rotation and decreasing infraspinatus muscle pain and tightness. The purpose of this study was to investigate the effects of MET on muscle tightness and its effects on pain and range of motion in early rehabilitation. Additionally, I improve joint mobility in adhesive capsulitis.

CASE DESCRIPTION :-

The patient, a 39 year old man, reports left shoulder pain, tightness in his muscles, difficulty moving during his daily activities, decreased joint range of motion, trouble combing his hair and difficulty moving his shoulder. MRI clinical findings showed changes of adhesive capsulitis and partial thickness of the rotator cuff. Observation: No pseudomeningocele or abnormal signal in the cervical cord. There is no evidence to suggest compression or gross lymphadenopathy either side of the brachial plexus (roots, trunks and division components). .Palpation demonstrated localized warmth and tenderness as well as tightness of the infraspinatus muscles. Shoulder pain may be increased by palpation. The results of the Visual Analog Scale (VAS), Shoulder Pain and Disability Index (SPADI) and Numerical Pain Rating Scale (NPRS) in acute frozen shoulder patients show that pain increases with activity and decreases with rest. Evaluation of the Difficulty of Measuring Shoulder Joint Lateral Rotation Range of Motion with a Goniometer The result of Manual Muscle Testing (MMT) should show the Weakness of Infraspinatus Muscle in Grade 4/5.

UNIQUENESS OF THE STUDY :-

The study can reveal measurable Improvement in pain (VAS) MET aid Reduce muscular tightness And I'mprove the function of Muscle Surroundings The Shoulder leading To Better Movement

INTERVENTIONS:-

MUSCLE ENERGY TECHNIQUE

(1) MUSCLE ENERGY TECHNIQUE FOR SHOULDER EXTERNAL ROTATION :-

The patient is treated with the Muscle Energy Technique 5 days a week for 4 consecutive weeks.

Patient position: The patient lies supine on a comfortable table, with the elbow joint flexed to a 90 degree angle.

Therapist position: The therapist is positioned on the side of the affected shoulder of the patient, with one hand stabilizing the shoulder girdle or scapula and the other hand placed on the distal forearm or wrist.

Procedure: Place the patient's shoulder in the internal rotation barrier. Have the patient push the forearm outward (external rotation) against my resistance, being careful not to let the shoulder move. The therapist should take the patient's shoulder further into the Internal Rotation (IR) Stretch three to five times after the patient contacts their

infraspinatus with twenty to thirty percent effort, holds the contraction for five to ten seconds, and then relaxes. Goals are to reduce muscle tension, increase joint range of motion and increase lateral rotation.



Figure 1:- MET Of (Isometric Contraction) Infraspinatus



Figure 2 :- MET Of (Relaxation And Passive Stretch) Infraspinatus

(2)MET FOR SHOULDER FLEXION RESTRICTIONS :-

Position of the patient: supine

The position of the therapist:- is to stand by the side of the table.

Procedure :- Using one hand, stabilize the patient's collarbone and scapula while grasping their forearm with the other. After the therapist passively kept the patient's upper shoulder in flexion, the patient was told to use no more than 20% of their strength to bring their elbow toward their feet. The patient was told to relax and exhale when this effort was firmly resisted for seven to ten seconds. The shoulder was shifted by the partition. Additional flexion

(3)MET FOR SHOULDER ABDUCTION RESTRICTIONS:-

Position of the patient: laying supine

therapist's position.:- Standing at the side of the table

Procedure :- gripping the patient's forearm with one hand while stabilizing the scapula and clavicle with the other. The patient is told to pull the body with no more than 20% of their maximum strength after the therapist passively brings their shoulder into abduction. This effort is firmly resisted, the patient is told to rest for seven to ten seconds, and when the patient exhales, the practitioner uses his contact on the elbow to bring the shoulder further into abduction.

(4)MET FOR SHOULDER INTERNAL ROTATION RESTRICTIONS:-

Position of the patient: supine lying

Position of the therapist: - On the side of the table.

Procedure :- Using one hand, stabilize the patient's collarbone and scapula while grasping their forearm with the other. The patient is in a supine position, with the upper arm at a right angle to the trunk, the lower arm parallel to the trunk, pointing caudally, and the palm facing down. This causes the infraspinatus to extend and the arm to rotate internally. In spite of the practitioner's opposition, the patient slowly and gently raises the dorsum of the wrist toward the ceiling for seven to ten seconds. After that, the patient is told to relax, and upon exhaling, the forearm is brought down the floor.

OutComeMeasures :-

(1)Shoulder Pain and Disability Index (SPADI)

(2) Numerical Rating Scale for Pain (NPRS)

(3)ROM: Range of Motion

RESULT:-

After physiotherapy treatment with the Muscle Energy Technique the patient reported less pain and tightness and improved joint range of motion and lateral rotation. This exercise helped to ease the stiffness of the joints. Pain was measured with the Shoulder Pain and Disability Index (SPADI) and Visual Analog Scale (VAS).

Numerical Pain Rating Scale (NPRS): The VAS score after exercise is 3/10, private VAS score is 7/10. The lateral rotation range of motion affected is 30 degrees but it increases to 60–80 degrees after exercise by goniometer.

OUT MEASUREMENT	COME	PRE- TREATMENT	POST- TREATMENT
VAS PAIN SCORE		7/10	3/10
LATERAL ROTATION ROM GONIOMETER		30 DEGREE	60-80 DEGREE

DISCUSSION:-

The Muscle Energy Technique in Frozen Shoulder Patients Has been shown to increase range of motion, improve functional capacity and lessen pain. The efficacy of METs in the treatment of adhesive capsulitis has been assessed in many studies. Stephanie et al (2011) A cohort study of 61 basketball players found that the treatment of the glenohumeral joint abduction by MET improved the internal rotation, the range of motion and the horizontal abduction. Also in 2014 it was found that MET helped patients with frozen shoulder syndrome to improve the functional ability of their shoulder. In our study, we found a statistically significant improvement in the lateral rotation range of motion score after four weeks of treatment. The effectiveness of MET and mobilization strategies in the treatment of adhesive capsulitis has been shown in several studies. MET is effective in increasing the range of motion of glenohumeral joints. The physiological mechanism that underlies the changes in muscle extensibility induced by MET is that these mechanisms modify muscle physiology and therefore increase the range of motion of the joint.

CONCUSSION:-

The patient with adhesive capsulitis demonstrated significant progress in joint range of motion and lateral rotation following 4 weeks of physical therapy, confirming the effectiveness of the Muscle Energy Technique exercise program in alleviating discomfort and enhancing range of

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