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Risk Factors For On Shoulder Pain In Chronic Hemiplegic Patients.

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ABSTRACT

Shoulder pain is a common and distressing stroke complication that interferes with both function and quality of life.Hemiplegic shoulder pain affects 16% to 72% of stroke patients. It can occur in up to 80% of stroke patients who have little or no voluntary movement of the affected upper limb; it impedes recovery after stroke: it can cause significant distress, reduce activity, and significantly hinder rehabilitation.Changes in the alignment of skeletal components of the shoulder complex have been described in both the flaccid and spastic stages of paralysis following stroke, and both have been implicated in the causes of Hemiplegic shoulder pain (HSP).Russian currents and exercise were used to improve shoulder abduction range of motion and pain in periarthritic shoulder subjects. Russian current was used at a range of medium frequencies, and it was discovered that as the stimulating frequency increased, so did the patient's comfort. This type of current stimulation is more effective for voluntary muscle contraction and pain relief in shoulder periarthritis. According to this study, Russian current stimulation is beneficial in improving shoulder movement and decreasing shoulder discomfort in chronic hemiplegic patients. It can be added to the established strategy for treating shoulder pain in chronic hemiplegic patients.

Keywords: Shoulder Pain, Chronic Hemiplegic Patients.

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INTRODUCTION

Shoulder pain is a common and distressing stroke complication that interferes with both function and quality of life [1, 2]. Hemiplegic shoulder pain affects 16% to 72% of stroke patients [3]. It can occur in up to 80% of stroke patients who have little or no voluntary movement of the affected upper limb; it impedes recovery after stroke: it can cause significant distress, reduce activity, and significantly hinder rehabilitation [4].

Changes in the alignment of skeletal components of the shoulder complex have been described in both the flaccid and spastic stages of paralysis following stroke, and both have been implicated in the causes of Hemiplegic shoulder pain (HSP) [5].

Russian currents and exercise were used to improve shoulder abduction range of motion and pain in periarthritic shoulder subjects. Russian current was used at a range of medium frequencies, and it was discovered that as the stimulating frequency increased, so did the patient's comfort. This type of current stimulation is more effective for voluntary muscle contraction and pain relief in shoulder periarthritis [6].

Neurological factors

The possibility of a peripheral nerve lesion occurring as a result of arm traction, pressure on the brachial plexus, or secondary to peripheral nerve trauma. A brachial plexus injury has been described in hemiplegia and suggested as a possible effect of subluxation [7, 8].

Shoulder muscles have been linked to the concomitant internally rotated and adducted upper extremity posture. When stretched, spastic muscles are painful; this could be one of the mechanisms involved in enthesopathy caused by increased tendon traction [7, 9].

Factors related to the joint

Rotator cuff tendon tears were found in 33-40% of hemiplegic patients in arthrographic studies [7, 10].However, these studies found that cuff rupture was no more common in hemiplegic patients than in age-matched controls. Another study in painful hemiplegic shoulders found no tendon lesions but did find signs of adhesive capsulitis in 23 of 30 patients [7, 11].

Shoulder subluxation

The lack of effective interventions for treating shoulder subluxation in hemiplegia has prompted researchers to look into neuromuscular electric stimulation. The efficacy of functional electrical stimulation (FES) on shoulder subluxation and pain in hemiplegic patients [7, 12].

Cause of Painful Hemiplegic Shoulder

A search string was created by combining the key terms:'stroke or cerebrovascular accident or hemiplegia' and 'risk' or factor or determinant or cause or predictor or pathogenesis or predispose or associate or 'correlat' or 'etiolog' or incidence or attribute and range of movement or ROM or spasticity or flexibility or loss of muscle strength or muscle atrophy or severity of strokeor shoulder subluxation', as well as'shoulder pain, frozen shoulder, glenohumeral joint pain, or rotator cuff pain [13].

Shoulder subluxation

Shoulder subluxation occurs when the mechanical integrity of the glenohumeral joint is compromised. Because the glenohumeral joint is multiaxial and has a wider range of motion than other joints, it must forego a more stable bone structure, which is compensated for by muscular stability. As a result, a change in normal muscular function poses a risk for subluxation. The hemiplegic arm is flaccid or hypotonic in the first few days after a stroke. As a result, the shoulder muscles are unable to secure the humeral head to the glenoid cavity, putting the shoulder at risk of subluxation. 13 Shoulder subluxation is painful [15].

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Spasticity and contractures

Muscular balance is normally maintained between different muscle pairs (agonists and antagonists); however, after a stroke, muscular balance may be altered as muscles affected by spasticity become dominant. This result in the typical postures associated with a spastic muscle pattern [14].

INTERVENTIONS

Manual therapy[16]

Separation traction, long axis traction, up-and-down sliding, abduction sliding to the side of the foot, front-to-back sliding, back-to-front sliding, side sliding, and internal rotation swings were all used in manual therapy (Fig. 1). According to the patient's shoulder joint condition, the Maitland four-level technique was used.

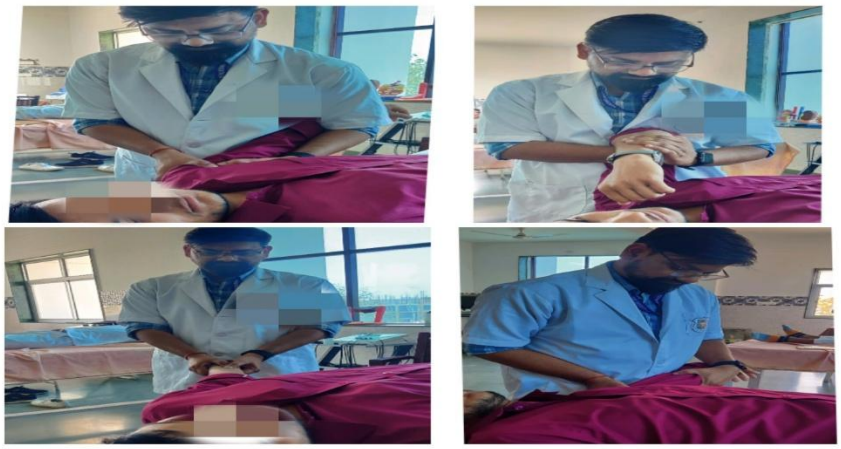
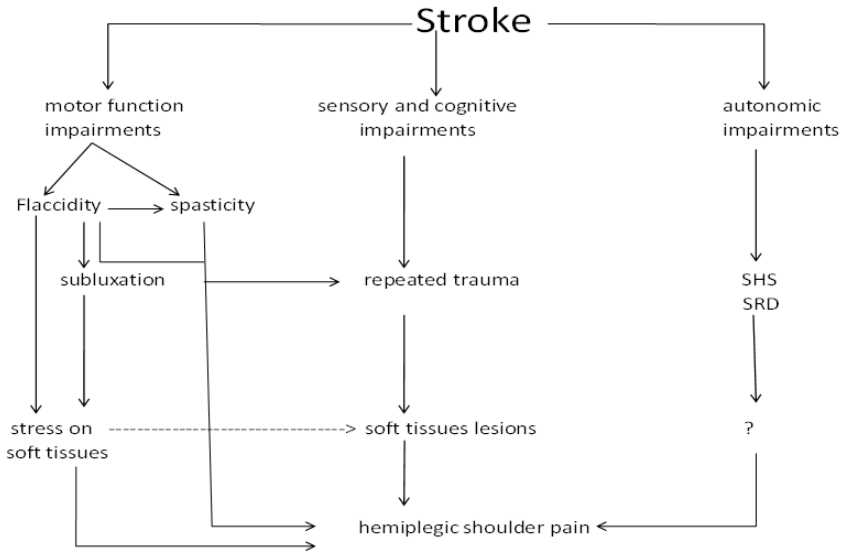


Figure 1: Traditional manual therapy.

Etiological Model

Figure 2 depicts the aetiology of hemiplegic shoulder pain. Motor function impairments following a stroke may result in upper extremity flaccidity or spasticity. Both of these factors have been identified as risk factors for hemiplegic shoulder pain: Flaccidity can cause stress on the soft tissues around the shoulder (capsule, ligaments, nerves, plexus brachialis), resulting in hemiplegic shoulder pain, 30 and can also cause glenohumeral subluxation, which can result in hemiplegic shoulder pain [17, 18].



(Putative) causal relationshipmay develop into (SHS shoulder-hand syndrome; SRD sympathetic reflex dystrophy)

Figure 2 :- An etiological model for hemiplegic shoulder pain.

Shoulder pain is one of the most common and serious complications of stroke, with a prevalence ranging from 34% to 86% and typically developing between 2 weeks and 2 months [19, 20].

There are numerous underlying pathologies that can cause hemiplegic shoulder pain, including adhesive capsulitis (50%), glenohumeral subluxation (44%), rotator cuff tear (22%), and shoulderhand syndrome (16%) [19-21].

Prevention

The ideal approach to hemiplegic stroke pain management is to avoid it in the first place. Several strategies have been used to prevent hemiplegic shoulder pain. Prophylaxis must begin immediately following the stroke in order to be effective [21].

Handling

In stroke patients, poor handling and positioning of the affected upper limb contribute to shoulder pain. Careful limb positioning and handling are thought to prevent hemiplegic shoulder pain, but there is disagreement about how best to achieve correct limb positioning [21].

Strapping

Subluxation of the glenohumeral joint may play a role in the development of shoulder pain in this group of patients. When the muscle tone around the glenohumeral joint is sufficient to prevent subluxation, external support can be removed. The use of a sling should always be accompanied by an exercise programme [21].

Physiotherapy

According to some studies, passive abduction of the hemiplegic arm can cause rotator cuff injury, which causes shoulder pain. Patients' therapeutic range of motion exercises, on the other hand, may involve passive abduction of the arm [21].

Hemiplegic shoulder pain (HSP)& central pain[22]

Shoulder pain after a stroke has been described as a collection of complex issues. [23] Clinical diagnosis is based on the source of shoulder pain, which includes altered sensitivity to pain stimuli, shoulder-hand syndrome, and pain caused by misaligned joints or shortened muscles. [24] Understanding HSP is complicated by the difficulty in distinguishing shoulder pain from central post-stroke pain, as both can be present in stroke patients [23, 24]. The prevalence of central post-stroke pain in stroke patients ranges between 1 and 12%, and it is most likely to be present in patients with sensory impairment [24].

Central sensitization, defined as an increased response of nociceptive neurons in the CNS to normal afferent input, can also play an important role in HSP.

CONCLUSION

According to this study, Russian current stimulation is beneficial in improving shoulder movement and decreasing shoulder discomfort in chronic hemiplegic patients. It can be added to the established strategy for treating shoulder pain in chronic hemiplegic patients.

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