



Frozen Shoulder

A diagnosing dilemma

A White Paper by Riseley Physiotherapy Pty Ltd.
8 Riseley Street, Applecross WA 6153
T 08 9364 4073 E mail@riseley.com.au

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If unsure whether your patient has subacromial impingement syndrome or adhesive capsulitis a simple first test is to assess their external rotation range of motion. A marked reduction in external rotation is indicative of adhesive capsulitis keeping with the characteristic capsular pattern of restriction.

Frozen shoulder and subacromial impingement syndrome (SAIS) can present with a similar clinical picture but have two completely different underlying processes and subsequently need different management.

Frozen shoulder is also termed, adhesive capsulitis, with the current consensus definition for adhesive capsulitis being

“a condition of uncertain aetiology characterized by significant restriction

of both active and passive shoulder motion that occurs in the absence of a known intrinsic shoulder disorder.”

It is a self-limiting disease with the presence of capsular fibrosis caused by a cytokine-mediated synovial inflammation; however this is not well understood. It can be classified as primary idiopathic adhesive capsulitis if there are no findings on history or examination that explain the onset of disease. Theories of immunologic, biochemical, or hormonal imbalances have been linked to the cause. Secondary adhesive capsulitis

develops from known causes of stiffness and immobility, such as previous shoulder trauma or surgery.

Adhesive capsulitis has a natural healing time of 18 months to 4 years and intervention has been shown to have minimal effect on clinical course. Treatment is based on stage of the disorder therefore correct diagnosis of stage is vital in attempting to impart a

change in symptoms.

SAIS is not a disease but a secondary reaction to

surgery, injury or trauma. Conditions such as calcific tendonitis, bicipital tenosynovitis, glenohumeral and acromioclavicular arthritis, bursitis and tears of the rotator cuff can lead to a stiff and painful shoulder. These conditions lead to loss of active range but lack the true capsular contracture and restriction in passive range of motion and, therefore, should not be labelled as adhesive capsulitis. Early surgical or conservative intervention can reduce the clinical course significantly and reduce secondary complications. Treatment is directed

towards symptoms and functional limitations.

Clinical Presentation

Frozen shoulder, when a primary idiopathic condition has an insignificant mechanism of injury; but has been linked with open heart surgery. As a secondary idiopathic condition frozen shoulder often occurs due to trauma or surgery to the affected shoulder. Research has identified diabetes mellitus and hypothyroidism as risk factors. There is often a long history of night pain and sub-acromial injections which have not helped

Research and clinical experience have contradicting opinions on the incidence rates of bilateral involvement and reoccurrence.

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The single strongest indicator of frozen shoulder is reduced range of motion in all directions

reduced range of motion in all directions, however not all directions are equal. Frozen shoulder produces reduced range of motion in a capsular pattern the most affected range, in order, is external rotation, abduction, internal rotation and then flexion. On imaging there is no evidence of musculoskeletal pathology that explains the symptoms. Research is mixed as to whether or not synovial thickening on MRI is a reliable diagnostic indicator. The gold standard indication can only occur on visually inspecting the capsule via arthroscopy.

The progression of frozen shoulder can be broken in to three stages, distinguished by symptoms

1. Freezing – range of motion limited by pain and reducing week by week. Greater degree of night pain.
2. Frozen - range limited by pain, with the restriction of range of motion plateauing. Night pain reducing.

3. Thawing - range is limited by restriction not pain, with gradual improvement week to week. Night pain normally resolved.

The time frames of each stage are not clear so they are not clearly demarcated, but they do influence the most effective treatment so identification is important.

Best Practice Treatment

As the underlying mechanism involved in adhesive capsulitis is an unknown disease process and the stages of disease are not well defined, research has resulted in conflicting and non-significant evidence for the benefits of conservative or surgical treatment. Overall when research subdivided

outcomes in to pain and range of motion there was strong

evidence in favour of steroids for pain, and for range of motion moderate evidence in favour of physiotherapy. One main theme that has been portrayed consistently throughout research is conservative management should be the first approach for six months before surgical intervention is considered. Below are some of the main aims of rehabilitation with the views of research as to the best practice for managing them.

Reduce night pain – In the freezing stage an early goal is to interrupt the inflammatory process. Oral steroids have been used for pain relief however the current research shows no benefit in the short or long term. Intra-articular steroid injections have shown significant benefits for pain in the short and mid term.

Minimise detrimental effects of immobilisation – The current literature is inconclusive on the effectiveness of

interventions for improving range of motion. Many have been reviewed such as intra-articular injections, physiotherapy, surgical techniques including hydrodilatation and manipulation under anaesthetic, either on their own or in combination with each other. Physiotherapy was the most reviewed and had moderate effects

whereas the other techniques had limited or no evidence

One main theme that has been portrayed consistently throughout research is conservative management should be the first approach

found. The combinations of treatments have shown an additional benefit than physiotherapy alone. This management plan may be reserved for patients who are showing limited progressions with physiotherapy.

Due to the extended period of reduced range of movement the shoulder musculature is at risk of wasting, which may lead to secondary complications upon resolutions of functional range. This secondary limitation can be reduced with physiotherapy interventions including sub-maximal isometric muscle strengthening and exercises involving available joint range of motion. Physiotherapy would be low intensity as it is not affecting the primary pathology only secondary complications which eventuate from this disease process. It should be utilised to determine the current functional capacity of the shoulder, and to design a home program which assists in the maintenance of strength and range. As treatment is governed by the stage of the disease and the disease process is slowly changing, monthly reviews are optimal to determine disease progression and to advance exercises. It has been thought that physiotherapy can be more effective in the thawing phase when range is limited by tightness not pain however due to the poor distinction of stages; research has not been able to demonstrate this.

Education on disease process – with the longstanding nature of symptoms education is an important part of rehabilitation to maintain self-efficacy. Reduced self-efficacy, depression and anxiety have all been linked to the development of chronic pain, which if develops may continue the pathological condition once the original disease

process has resolved. The physiotherapist can help to ascertain

and set appropriate goals in an attempt to restore as much function as possible throughout the changing process. With reassurance and goal setting a patient will be more proactive and feel more in control of their rehabilitation.

This paper was produced by the staff of Riseley Physiotherapy Pty Ltd. The paper may be forwarded but may not be altered without permission.

The paper is intended to stimulate discussion. We welcome comments and feedback.

For more information contact Glenn Ruscoe on telephone 08 9364 4073 or by e-mail glennr@riseley.com.au.

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