Dealing with frozen shoulder

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Frozen shoulder can be a difficult problem to diagnose and manage. The aetiology is not known, and the evidence to support accepted treatments is scant and of questionable quality.

Frozen shoulder (adhesive capsulitis or periarthritis) is a relatively common and painful condition associated with global restriction of passive movement. The pathology is poorly understood, but arthroscopic studies show that fibrous tissue changes and inflammation occur around the area near the subscapularis bursa at the rotator interval. These changes can be visualised on MRI, which may suggest the diagnosis without providing definitive identification.

The aetiology is not known. Although frozen shoulder can occur after periods of immobilisation (such as following stroke states or after long periods of bed rest), it typically occurs without any such precipitants. Patients with some medical conditions (particularly diabetes) seem to be prone to frozen shoulder, and there is a substantial chance that a patient who has had an episode affecting one shoulder will develop it in the other shoulder.

How is frozen shoulder diagnosed?

Frozen shoulder is diagnosed clinically. Patients present with a severely painful shoulder that may initially have had a normal range of movement but was globally restricted within a few weeks. Typically, passive movement is restricted in at least two planes (usually external rotation and, to a lesser extent, abduction and internal rotation). Osteoarthritis of the shoulder or a large deposit of calcium in the rotator cuff need to be excluded – plain x-ray is usually sufficient.

An inflammatory arthritis affecting the shoulder can mimic frozen shoulder but is typically symmetrical. A diagnosis of frozen shoulder should be entertained with great reluctance if the condition is bilateral because a generalised inflammatory arthritis such as rheumatoid arthritis or polymyalgia rheumatica is far more likely.

What is the natural history of frozen shoulder?

Classically, frozen shoulder progresses through four phases:

- initial phase – the shoulder is painful, particularly at night, but there is no restriction of movement
- freezing – the pain continues, particularly when lying in bed and at rest, and there is progressive loss of movement
- frozen – night and rest pain improves, but the shoulder continues to be very painful when reaching the end range of movement or on sudden movements
- thaw – the shoulder spontaneously regains movement and loses end range pain as the range of movement improves.

What are the treatment options?

The treatment options for frozen shoulder (pain and reduced range of movement) are outlined in the Table.

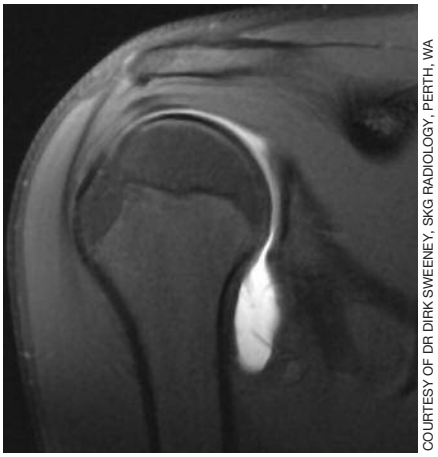

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Figure. A magnetic resonance arthrogram (oblique coronal plane) demonstrating normal recesses of the glenohumeral joint. In adhesive capsulitis, the joint capacity is reduced and the recesses of the glenohumeral joint are contracted.

Doing nothing

The vast majority of people with frozen shoulder regain movement and have reso - lution of pain, although these may take two to three years. The odds are strikingly in favour of spontaneous improvement, so simply observing remains a reasonable treatment option, depending on patient preference.

Analgesia

The pain of early frozen shoulder is most troublesome in bed, and potent opiate analgesics may be required to provide reasonable sleep. Later, anti-inflammatory medication or simple analgesics may suffice.

Corticosteroid injections

Corticosteroid injection of the subacromial bursa or glenohumeral joint may be of value, but the strength of published evidence supporting its use is limited (as it is for all treatment options in frozen shoulder).

Oral corticosteroids

There is evidence from a single randomised controlled trial that a short

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Series Editor: Dr Paddy Hanrahan, Honorary Secretary, Australian Rheumatology Association.

continued

Table. Treatments for frozen shoulder

Initial or freezing phase
- Analgesia (opiates, anti-inflammatory medications and potent opiate analgesics)
- Corticosteroid injections
- Oral prednisolone (for severe symptoms)

Frozen phase
- Exercise
- Analgesia
- Hydrodilatation (for moderate or severe symptoms)
- Capsulotomy (for severe symptoms)

Thaw phase
- Exercise

course of oral corticosteroids may relieve the pain of frozen shoulder,[1] but it does not improve the range of motion in the short term. Nevertheless, if pain remains the main complaint, this intervention can be of great value. Typically, 20 to 25 mg of prednisolone (Panafcortelone, Solone) is prescribed for two to three weeks.

Physical therapies
Symptomatic therapies (such as heat or ultrasound) are of limited value as sole management but can be useful adjuncts. Attempts to move the shoulder during the highly inflammatory early phases usually aggravate the condition markedly and often cannot be tolerated. However, when the pain at night and rest has resolved, physical therapies are of value to improve the range of movement using active, assisted exercises. Frequently, patients have muscle weakness in the later stages that needs to be corrected to maximise the improvement in shoulder function.

Manipulation
Orthopaedic manipulation under general anaesthetic has been used for many years, but evidence for its effectiveness is poorly documented. It can cause significant damage to the glenoid labrum and attachments of the rotator cuff.

Other surgical procedures
In recent years, capsulotomy with resection of part of the glenohumeral joint capsule under arthroscopy has been used for recalcitrant cases. When it has been coupled with an aggressive physical rehab - ilitation program the reported results have been impressive;[2] however, recovery typically still takes six to nine months.

Hydrodilatation
Distention arthrography (hydrodilatation) has been in vogue in Australia for managing adhesive capsulitis in recent years. A recently completed randomised controlled trial demonstrated benefit from hydrodilatation compared with sham hydrodilatation.[3]

Hydrodilatation is not well tolerated when pain levels are high, and when night pain and rest pain are prominent symptoms. The procedure should be deferred until this phase has resolved.

Outcome
Up to 30% of patients have some residual restriction of movement at three years. Fortunately, this restriction rarely compromises their function substantially.[4] MT

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