THAWING THE FROZEN SHOULDER: A NEW TWIST

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INTRODUCTION

Frozen shoulder (adhesive capsulitis) is a common, often chronically disabling, condition, seen largely in middle age, with a female preponderance. At least 25% of the population will suffer with the condition at some time with up to 20% affected bilaterally. In addition, it is another burden for the diabetic patient, 20% of whom will develop frozen shoulder, particularly if insulin-dependent for many years. They are often affected at a younger age, with more bilateral cases, and the condition runs a more aggressive course than in the general population.

Frozen shoulder is not synonymous with 'painful shoulder': there are specific criteria for establishing the diagnosis. Firstly, there should be no history of trauma to the affected shoulder. Secondly, there must be a global limitation of motion with, characteristically, reduced passive external rotation to less than 30°. Finally, radiographs of the shoulder must be normal. All other conditions which produce a similar pattern of stiffness will have abnormal features on plain radiographs and, therefore, additional investigations are rarely required.

The natural history of the condition was first described in the 1930s by Ernest Amory Codman. The condition has three phases, with a wide range of severity:

- 'freezing' or inflammatory phase. The patient describes increasing diffuse shoulder pain, often radiating widely. Pain is worse at night, and at the extremes of movement. Shoulder movements gradually diminish. This lasts approximately six months.
- 'frozen' or adhesive phase. Over the subsequent 12 to 18 months, the pain gradually reduces, leaving the patient with a globally stiff shoulder, actively and passively. Activities of daily living are often severely restricted.
- 'thawing' or resolution phase. The stiffness and residual pain slowly subside. This can take up to three years.

In many patients, the disease has a benign outcome. Full recovery, however, is often protracted and is not guaranteed. Longterm follow-up studies have shown 40-60% of untreated patients have residual symptoms at ten years!

Currently, the evidence base for effective treatment of this condition is small, with few comparative trials and small sample groups. Despite this, a more active approach has evolved to manage this condition.

MANAGEMENT

- 1 For the first three months, the patient should be managed conservatively with advice, analgesia (NSAIDs if tolerated are of benefit), physiotherapy to include specific shoulder capsular stretches (elevation, external rotation, internal

rotation and cross-body stretch) and intra-articular injection(s) of steroid with or without local anaesthetic.

- 2 If the shoulder progresses into the frozen phase, referral to an orthopaedic surgeon is indicated. The ancient technique of shoulder manipulation remains the mainstay of treatment.

MANIPULATION UNDER ANAESTHESIA (MUA)

A formal manipulation of the frozen shoulder is usually not considered until at least three months after the onset of symptoms and the results of MUA are usually better in the frozen phase.

MUA includes three components, all of which are important for success:

- 1 Anaesthesia, which should include a regional (inter-scalene) block for the affected arm. This provides pain relief for the first 12-24 hours post-procedure and allows immediate shoulder mobilisation.
- 2 Manipulation of the affected shoulder joint, breaking down adhesions to achieve as full a range of movement as possible. It is current practice to inject the shoulder with local anaesthetic and corticosteroid to reduce inflammation.
- 3 Immediate intensive inpatient physiotherapy, including both passive pulley exercises and active shoulder movements as before, once tolerated. This continues as an outpatient. In our series outpatient treatment lasted for an average of seven weeks.

Patients need to be in hospital for between one and three days after MUA, until comfortable and confident with their exercises. Complications are rare (<1%).

RESULTS OF TREATMENT

All patients are routinely reviewed at around six weeks after MUA. In a recent audit of the second author's last 31 shoulder manipulations, over 90% had good pain relief and over 80% a much improved range of motion at this stage. All patients gained some benefit from MUA and the results appeared to be better in those patients for whom the inter-scalene nerve block had been most effective.

Both open release and arthroscopic division of adhesions have been described in the literature for the recalcitrant frozen shoulder. To date, using the multi-disciplinary approach described above, we have not found such operations necessary. Patient satisfaction with this approach is extremely high and in contrast to many other joints it seems that manipulation will continue to have an important role to play in the shoulder.