

Available online at [www.sciencedirect.com](http://www.sciencedirect.com)

ScienceDirect

journal homepage: [www.elsevier.com/locate/jor](http://www.elsevier.com/locate/jor)

## Original Article

# The management of secondary frozen shoulder after anterior shoulder dislocation – The results of manipulation under anaesthesia and injection

Hideki Nagata<sup>\*</sup>, William J.C. Thomas, David A. Woods

Department of Trauma &amp; Orthopaedics, Great Western Hospitals NHS Foundation Trust, Swindon, SN3 6BB, United Kingdom

## ARTICLE INFO

## Article history:

Received 17 December 2014

Accepted 27 January 2015

Available online 16 February 2015

## Keywords:

Secondary frozen shoulder  
 Manipulation under anaesthesia  
 Anterior shoulder dislocation  
 Instability

## ABSTRACT

**Introduction:** Patients with secondary frozen shoulder following anterior dislocation were treated with manipulation under anaesthesia (MUA) and injection.

**Methods:** Ten patients included in study. Oxford Shoulder Scores (OSS), range of motion (ROM) and need for any further treatment measured.

**Results:** Mean follow-up of 93 weeks. OSS and ROM improved in all patients. Three patients required repeat MUA. Two patients developed recurrent instability.

**Discussion:** Secondary frozen shoulder may be more recalcitrant. Recurrent instability is a risk following anterior shoulder dislocation. It is feasible that by performing an MUA to maximise mobility, stability may be sacrificed. It should be performed with caution.

© 2015 Prof. PK Surendran Memorial Education Foundation. Published by Elsevier, a division of Reed Elsevier India, Pvt. Ltd. All rights reserved.

## 1. Introduction

Patients with frozen shoulder or adhesive capsulitis characteristically present with a painful reduction in active and passive range of motion. The majority of these cases have no identifiable aetiology and are categorised as primary or idiopathic frozen shoulder affecting 2% of the population. Those cases of frozen shoulder with an identifiable non-traumatic (OA, rotator cuff tendinopathy, calcific tendinitis) or traumatic (fracture, dislocation, soft tissue injury) shoulder pathology are categorised as having secondary frozen shoulder.<sup>1</sup>

Shoulder dislocations affect approximately 1.7% of the population and are most frequently secondary to trauma, with

over 95% being anterior dislocations.<sup>2</sup> It is known that there is a bimodal age and sex distribution with peak incidence in men aged 20–30 years and in women aged 61–80 years.<sup>3</sup> Sequelae of dislocations may include rotator cuff tear or brachial plexus injury. However, recurrent shoulder instability due to a structural injury such as a Hill Sachs, Bankart lesion or distended capsule can be particularly problematic and may require surgical stabilisation.

Following traumatic anterior dislocation of the shoulder, the majority of patients will develop some post-traumatic stiffness that usually resolves on its own. However, an unknown but presumed small percentage of patients may go on to develop secondary frozen shoulder, resulting in pain and stiffness, delaying recovery. This may occur as a

<sup>\*</sup> Corresponding author. 1 Belgrave Place, Bath, BA1 5JL, United Kingdom. Tel.: +44 (0)7971859756.

E-mail address: [hnagata@doctors.net.uk](mailto:hnagata@doctors.net.uk) (H. Nagata).

<http://dx.doi.org/10.1016/j.jor.2015.01.030>

0972-978X/© 2015 Prof. PK Surendran Memorial Education Foundation. Published by Elsevier, a division of Reed Elsevier India, Pvt. Ltd. All rights reserved.

consequence of a period of shoulder immobilisation although the true precipitating cause is not fully understood. It is believed that this group of patients do not have the same natural history as primary idiopathic frozen shoulder; namely a three phase response of freezing, frozen and thawing which could take several months to resolve.<sup>4</sup> The pathophysiology of post-traumatic secondary frozen shoulder is believed to be related, but a slightly different entity to primary frozen shoulder. There may be additional stiffness due to extrinsic contracture of the rotator cuff and obliteration of the normal sub-deltoid tissue planes. It may therefore be more recalcitrant to conservative treatment and more likely to require intervention as the chance of spontaneous resolution is less for these types of frozen shoulder.<sup>1</sup>

To our knowledge, no studies to date have documented the natural history of patients with secondary frozen shoulder from a previous shoulder dislocation. We were faced with a group of patients who had developed secondary frozen shoulder following an anterior shoulder dislocation and failed conservative treatment by physiotherapy. Although not infrequently seen clinically, the literature provides little guidance on their management.

Manipulation under anaesthetic (MUA) and injection is an established treatment method for frozen shoulder.<sup>5,6</sup> Having previously found that treatment with an MUA and injection in primary frozen shoulder results in good outcomes and is safe,<sup>5</sup> we treated this group of patients similarly. There was however concern in this group of patients that the frozen shoulder or contracted capsule may help to provide some stability to the shoulder and that MUA and injection may actually induce recurrent instability of the shoulder joint by releasing the contracted capsule.

The purpose of this study is to present an observational study of a small series of patients with frozen shoulder secondary to anterior dislocation who were treated with MUA and injection.

---

## 2. Methods

We performed a retrospective review of a prospectively collected, single-surgeon, consecutive series of MUA for and injection for frozen shoulder in the frozen phase over a thirteen-year period from January 1999 and May 2012. The notes were independently reviewed by two of the authors (WJCT, DAW). Institutional ethical approval was obtained. Frozen shoulder was defined as a history of painful shoulder with resultant restricted elevation and external rotation in the presence of normal radiographs. All patients who presented with symptoms and signs of frozen shoulder following documented traumatic anterior dislocation in the previous six months were included in the study. All cases were first time dislocations that were treated initially with simple reduction under sedation and early mobilisation (within two weeks). All patients had failed initial conservative treatment with physiotherapy and had persistent shoulder stiffness and pain. Our exclusion criteria included previous recurrent dislocations and patients who were unfit for a general anaesthetic. All patients had pre-operative glenohumeral radiographs (antero-posterior and Y-views) taken and were listed for MUA as soon

as the inclusion criteria were met. The time from dislocation was recorded at the time of initial consultation.

The procedure was performed as a day case and involved positioning the patient supine on a trolley in the anaesthetic room. A general anaesthetic was then administered. With one hand stabilising the scapula, the range of glenohumeral motion was recorded. The surgeon's other hand supported the proximal humerus and with a short lever arm to reduce the risk of iatrogenic injury, the shoulder was manipulated sequentially through a range of abduction, forward flexion, external rotation, cross body adduction and internal rotation. The final range of motion (ROM) was recorded and 10 ml 0.5% bupivacaine and 80 mg of depo-medrone were injected into the glenohumeral joint via the direct anterior approach.

All patients were offered a rehabilitation programme that commenced on the day after surgery and were permitted to resume normal activity as soon as possible. They were asked to carry out a self-exercise programme of pendular exercises and wall climbing movements. Patients were then assessed at follow-up by the lead author (DAW). Outcome measures included the Oxford Shoulder Score (OSS)<sup>7</sup> assessed immediately before surgery, at each follow-up appointment and by postal questionnaire. Also, the ROM of the shoulder before and immediately after manipulation was recorded along with any complications.

Our experience with primary frozen shoulder has been that those who achieved a successful result following MUA and injection reported significant improvement in pain within three to four days and improvement in stiffness within the first three weeks. Therefore, those who had persistent symptoms at the follow-up appointment were considered unlikely to improve further and were offered a further MUA. A postal survey with follow-up telephone consultation was conducted to assess subsequent long-term progress.

---

## 3. Results

A total of 468 consecutive patients with a frozen shoulder were referred to the lead author (DAW) during this period and underwent MUA and injection. Out of these, ten patients (five male and five female) met the inclusion criteria to the study with a mean age of 48 (24–68) years old. There were no diabetics. All ten patients had simple anterior dislocations which were reduced in the emergency department with analgesia and sedation. The mean time from dislocation to MUA was 16 (9–28) weeks and the patients were subsequently followed up following MUA at a mean of 38 (15–72) days. There were no intra-operative or immediate complications following the MUA, including dislocations.

The mean improvement in OSS at follow-up following MUA and injection was 18 (range 2–30). All patients improved their score apart from one patient who subsequently re-dislocated before their follow-up appointment. The intra-operative ROM similarly improved by a mean of; 99° (forward flexion), 107° (abduction), 52° (external rotation) and 40° (internal rotation). (Table 1).

Two patients developed recurrent instability symptoms following their MUA and required stabilisation surgery in the form of one open and one arthroscopic anterior repair.

Download English Version:

<https://daneshyari.com/en/article/3251813>

Download Persian Version:

<https://daneshyari.com/article/3251813>

[Daneshyari.com](https://daneshyari.com)