



Contents lists available at ScienceDirect

Journal of Arthroscopy and Joint Surgery

journal homepage: www.elsevier.com/locate/jajs



Review article

Diagnosis and management of atraumatic shoulder instability

Marcus Bateman*, Anuj Jaiswal, Amol A. Tambe

Derby Shoulder Unit, Royal Derby Hospital, Derby, UK

ARTICLE INFO

Article history:

Received 26 April 2018

Accepted 21 May 2018

Available online xxx

Keywords:

Shoulder
Instability
Atraumatic
Multidirectional
Dislocation

ABSTRACT

Shoulder dislocation is usually as a result of trauma, although some individuals experience episodes of instability in the absence of injury. In this paper we highlight the classification of shoulder instability and describe clinical assessment before discussing the evidence behind managing this often complex problem both from a conservative and surgical perspective.

© 2018 Published by Elsevier, a division of RELX India, Pvt. Ltd on behalf of International Society for Knowledge for Surgeons on Arthroscopy and Arthroplasty.

Contents

1. Introduction	00
2. Classification	00
2.1. The TUBS & AMBRI classification	00
2.2. The Stanmore Triangle classification	00
2.3. Multidirectional instability	00
3. Clinical assessment	00
3.1. Subjective assessment	00
3.2. Objective assessment	00
3.3. Imaging	00
4. Conservative treatment	00
4.1. General principles	00
4.2. Evidence-based rehabilitation methods	00
4.3. Weight-bearing proprioception and plyometric exercises	00
4.4. Pain during exercise	00
5. Surgical management	00
5.1. Open capsular shift	00
5.2. Arthroscopic capsular plication	00
5.3. Thermal shrinkage	00
5.4. Rotator interval closure	00
6. Summary	00
Conflicts of interest	00
Funding	00
References	00

1. Introduction

The shoulder is the most frequently dislocated joint in the human body and whilst most occurrences are due to trauma, a subset of patients experience recurrent episodes of subluxation or dislocation in the absence of injury. The epidemiology of atraumatic instability is

* Corresponding author.

E-mail address: marcus.bateman@nhs.net (M. Bateman).

[@MarcusBatemanPT](https://twitter.com/MarcusBatemanPT) (M. Bateman)

<http://dx.doi.org/10.1016/j.jajs.2018.05.009>

2214-9635/© 2018 Published by Elsevier, a division of RELX India, Pvt. Ltd on behalf of International Society for Knowledge for Surgeons on Arthroscopy and Arthroplasty.

not well documented but estimates are in the region of 5% compared to 95% following trauma.¹ In this paper we describe the classification of shoulder instability and methods of clinical assessment before discussing the rationale behind treatment strategies and the evidence for different methods of treatment.

2. Classification

Shoulder instability can be classified in different ways and this helps to guide the clinician towards the most suitable treatment approach.² Two common methods of are the TUBS & AMBRI classification and the Stanmore Triangle classification.

2.1. The TUBS & AMBRI classification

First described by Thomas & Matsen in 1989, this method simply divides patients into two groups: those with a history of trauma resulting in a structural lesion of the glenohumeral joint, and those without a traumatic onset.³ The acronym TUBS stands for Traumatic, Unidirectional, Bankart, Surgery describing the traumatic nature of onset with instability in a single direction resulting usually in a Bankart lesion (tear of the capsule & labrum complex)^{4,5} that requires surgical repair. AMBRI stands for Atraumatic, Multi-directional, Bilateral, Rehabilitation and Inferior describing the absence of injury, instability in more than one direction that can apply to both shoulder and usually is managed with rehabilitation before considering an inferior capsular shift procedure if the patient fails to improve.

2.2. The Stanmore Triangle classification

Named after the Royal National Orthopaedic Hospital in Stanmore, London, UK, and sometimes referred to the Bayley's Triangle after the senior author Professor Ian Bayley,² this classification system is more detailed than Thomas & Matsen's. This method recognises that patients do not always fit into the two distinct categories of TUBS & AMBRI. Take, for example, a patient who has sustained trauma but has no structural lesion on imaging or arthroscopy. Conversely there may be patients who have no history of trauma but may have developed a structural lesion due to repeated microtrauma. The Stanmore classification (see Fig. 1) adds a third category of patients without a history of significant trauma but with a structural lesion of the glenohumeral joint. It allows for distinct cases that fit one of these three polar groups and also a sub-classification between the poles in cases that are less clear-cut. The characteristics of the polar groups are shown in Table 1. Type 1 corresponds to the TUBS group. Types 2 and 3 having the common components of underlying capsular laxity without trauma but type 2 has structural pathology of the glenohumeral joint whereas type 3 does not. Using the example of the patient who described significant trauma but no structural injury on imaging or arthroscopy this person would be sub-categorised as type 3(1). The authors' recommendation for treatment is guided by the presence of structural instability defects which are more likely to require surgical repair however if the patient displays additional abnormal muscle-patterning then this should be addressed first with rehabilitation. Those patients with no structural defect and abnormal muscle-patterning are advised to be managed non-operatively with rehabilitation. The difficulty however with this approach is the diagnosis of abnormal muscle-patterning which is difficult to assess clinically with poor specificity of just 11% compared to EMG testing.⁶

2.3. Multidirectional instability

In clinical practice and in the literature the term 'Multi-directional Instability' or MDI is often incorrectly used synonymously to describe

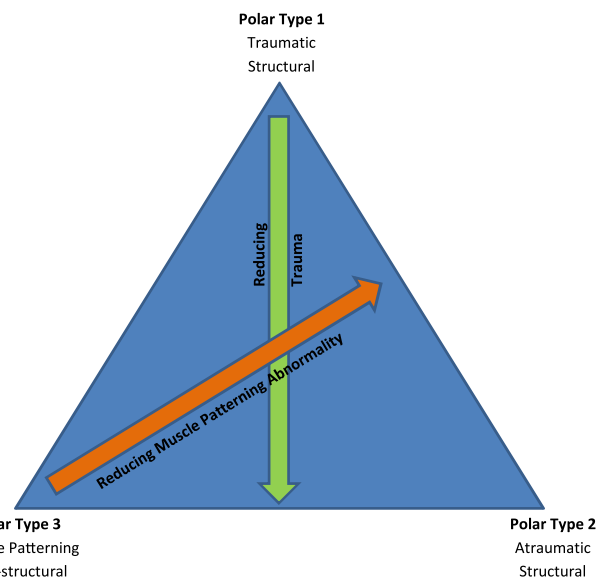


Fig. 1. The Stanmore Triangle. Reproduced and updated with permission of Mr Angus Lewis. Reprinted from *Current Orthopaedics*, Vol 18, Angus Lewis, T. Kitamura, J.I.L. Bayley, The classification of shoulder instability: new light through old windows!, Pages 97–108, Copyright 2004, with permission from Elsevier.

atraumatic instability.^{7–12} True MDI has a combination of anterior, posterior and inferior instability² where instability is defined as a symptom such as subluxation rather than a clinical assessment of laxity.¹² Patients may therefore be over-diagnosed as having MDI when in fact their symptoms are of atraumatic instability in a single direction: either antero-inferior or postero-inferior.

3. Clinical assessment

3.1. Subjective assessment

A thorough history is vital when establishing the classification of shoulder instability. The presence or absence of a significant traumatic event is key to determining the likelihood of structural pathology and the subsequent treatment pathway. Patients should be questioned regarding shoulder subluxation, either voluntary or involuntary, during childhood and whether there are other symptomatic joints such as clicking hips or patello-femoral joint instability to establish a possible background of joint laxity.

Age is also an important factor. Typically patients with atraumatic instability begin to experience symptoms in their teens or early 20s rather than later in life.²

The characteristics of the symptoms including the direction(s) of instability, frequency of episodes and ease of dislocation are useful to guide treatment planning and aid prognosis. Those patients with infrequent episodes that only occur with the shoulder in extreme positions of their normal range of movement or with powerful activities such as throwing are likely to respond faster and more effectively to intervention than those patients whose shoulders sublux repeatedly every day with simple shoulder movements such as flexion to 90° or whilst they are just sitting still.

Occupation or sports may be an important factor in the case of patients that acquire laxity due to the repeated microtrauma of fast or powerful movements at the extremes of range, such as with throwing sports.

3.2. Objective assessment

This should begin with exposure of the limb and observation of the overall appearance to assess for deformity such as muscle

Download English Version:

<https://daneshyari.com/en/article/8719128>

Download Persian Version:

<https://daneshyari.com/article/8719128>

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