SOCIEDADE BRASILEIRA DE ORTOPEDIA E TRAUMATOLOGIA

RBO REVISTA BRASILEIRA DE ORTOPEDIA

www.rbo.org.br

Update Article

Traumatic anterior instability of the shoulder☆

*João Roberto Polydoro Rosa**, *Caio Santos Checchia*, *Alberto Naoki Miyazaki*

Faculdade de Ciências Médicas da Santa Casa de São Paulo (FCM-SCSP), Departamento de Ortopedia e Traumatologia, São Paulo, SP, Brazil

ARTICLE INFO

Article history:
Received 27 August 2016
Accepted 1 September 2016
Available online 22 September 2017

Keywords:
Joint instability
Orthopedic procedures
Recurrence
Shoulder dislocation
Shoulder joint

ABSTRACT

The shoulder is the most unstable joint in the human body. Traumatic anterior instability of the shoulder is a common condition, which, especially in young patients, is associated with high recurrence rates. The effectiveness of non-surgical treatments when compared to surgical ones is still controversial. The purpose of this study was to review the literature for current concepts and updates regarding the treatment of this condition.

Instabilidade anterior traumática do ombro

Palavras-chave:
Instabilidade articular
Procedimentos ortopédicos
Recidiva
Luxação do ombro
Articulação do ombro

RESUMO

A articulação do ombro é a mais instável do corpo humano. Sua instabilidade anterior de causa traumática é uma condição comum e com alta taxa de recidiva em pacientes jovens. A eficácia do tratamento conservador comparado com o tratamento cirúrgico, em suas diversas abordagens, ainda é debatida. O propósito deste estudo foi revisar a literatura, rever conceitos e últimas atualizações sobre o tratamento dessa afecção.

☆ Paper developed at the Faculdade de Ciências Médicas da Santa Casa de São Paulo (FCM-SCSP), Departamento de Ortopedia e Traumatologia, São Paulo, SP, Brazil.

* *Corresponding author*.
E-mail: jopoly01@yahoo.com.br (J.R. Rosa).

http://dx.doi.org/10.1016/j.rboe.2017.09.003

Introduction

The first episode of shoulder dislocation (primary dislocation) has an incidence of 1.7% in the general population. Among the different types of this joint instability, the anterior dislocation due to trauma is the most common type, corresponding to more than 90% of the cases.[1–3] On this topic, Hovelius et al. developed three studies of great relevance. In the first, 257 patients were followed for a prospective 10 years after primary shoulder dislocation, and found a 49% recurrence rate. The second study, which followed the first (but this time with a 25-year follow-up), had two important results: (1) 72% of the patients with less than 22 years at the time of the primary dislocation progressed with recurrence, whereas this rate was only 27% in those older than 30 years; (2) almost half of the cases of primary dislocation occurred between 15 and 29 years.

In the third study, from 2008, Hovelius et al. were awarded a prize for research on the development of arthrosis in the same population of the second study. Of the group that progressed with instability, 29% developed mild arthrosis, 9% had moderate arthrosis, and 17% had severe arthrosis. In contrast, 18% of the patients, who had only one episode of dislocation, developed moderate to severe arthrosis. Detailed evaluation of the subgroups allowed the identification of three risk factors for the development of arthrosis: under 25 years of age at the time of the primary dislocation, alcoholism and high-energy sports. It is important to note that even patients who had only one episode of dislocation also present risks of developing arthrosis.[4–6] Due to the anatomical peculiarities and the controversies about the treatment of primary dislocation, besides the high recurrence rate in young patients, we will address the most important aspects that will help us understand and treat this condition.

Primary dislocation non-surgical treatment

In the case of acute anterior primary dislocation, the most preferably used treatment is the reduction of the joint and its immobilization, followed by a variable period of rehabilitation to restore the range of motion and muscle strength around the shoulder.[7]

The most frequent complication, a reason for subsequent instability, is the avulsion of the anteroinferior portion of the glenoid labrum, and the lower margin of the glenoid fossa, known as Bankart lesion.[8,9] If it heals, which can occur in up to 50–80% of the time, the recurrence becomes, in theory, less frequent.[10] It is therefore debated whether the duration and position of the shoulder immobilization are factors capable of influencing labrum healing.

A meta-analysis by Paterson et al., which included nine studies with levels I and II evidence, showed no benefit in immobilization for more than one week. However, it showed a lower tendency of recurrence with immobilization in lateral and major rotation if the patient's age was over 30 years.[11] In 1999, Itoi et al. proposed that this initial lateral rotation immobilization would promote, by ligamentotaxis, a better reduction of the Bankart lesion and, therefore, higher healing rates.[12]

In 2003, Itoi et al.[13] published a comparative clinical study between two groups of 20 patients each. The results showed a significant reduction in the rate of recurrence in those immobilized in lateral rotation for three weeks, when compared with those in medial rotation, especially in patients under 30 years. In 2007, the same authors conducted a similar research, but this time in a larger population (159 patients) and the results corroborated the findings of the first survey.[14] More recently, in 2010, Taskoparan et al. also found favorable results for lateral immobilization (in this study, it was maintained at ten degrees for three weeks, and was removed only for personal hygiene).[15]

In contrast, in 2009 Finestone et al. did not find differences in recurrence rates when immobilizing 51 patients during four weeks (27 of them in lateral rotation of 15 to 20 degrees and 24 in medial rotation). Liavaag et al. published a study with 188 patients in 2011 – 95 patients immobilized in medial rotation and 93 in 15-degree lateral rotation for three weeks – and did not find differences between the two groups.[16–18] The systematic review (which also included these latter two studies) developed by Patrick et al.[10] did not show a decrease in recurrence with lateral rotation immobilization. However, in a new study in 2015, Itoi et al.[19] show that the best position for injury reduction would be in 30-degree abduction with 60-degree lateral rotation, and that above 30-degree lateral rotation we already find reduction of the anterior lesion, but not of the inferior one. It may be finally argued that the 10–20 degrees of rotation used in the other studies were insufficient for injury reduction. Another hypothesis is that the joint hematoma would prevent the coaptation of the labrum lesion to its bed, and that the joint drainage could facilitate its coaptation.[10,19,20]

Finally, we can see that the existing publications to date do not support, with sufficient scientific evidence, the best period and the best position for immobilization; new studies are necessary to determine the best way for non-surgical management of this condition.

Primary dislocation surgical treatment

The indication of surgical treatment in traumatic primary dislocation is controversial.

Several authors have demonstrated favorable results for surgical stabilization after previous traumatic primary dislocation in young and active patients, in order to avoid or decrease recurrence rates.[21–27] Between August 2000 and October 2008, 14 shoulders were treated, of 14 patients, by the Shoulder and Elbow Group of Santa Casa de São Paulo. Satisfactory results (with 100% excellent results) were obtained in all cases, according to the Rowe evaluation criterion.[28] However, this strategy unnecessarily exposes some patients to surgical risk, because not all of them would progress with recurrences. On the other hand, we must remember that a recurrence can lead to an increase in osteocartilaginous lesions and lesions of the shoulder stabilizing ligaments.[6,23,29]

Thus, it is difficult to decide which is the best therapeutic indication. It should, therefore, be individualized, based on several individual characteristics, through discussion of results with the patient. Nowadays patients are increasingly