ABSTRACT

Objective: To determine: 1) whether the patients had been oriented to use immobilization for at least four weeks and which type of immobilization was prescribed, 2) how many dislocations occurred until the patient received information about the need of surgery, 3) How long it takes for patients to have an appointment with a shoulder surgeon, 4) How many dislocations the patient had at the time of surgery. Material and Methods: Of the 100 patients surgically treated or waiting for surgery at outpatient facilities, we interviewed 61 patients with questions related to the mechanism of dislocation, emergency service sites, guidelines for acute event treatment and follow-up, time elapsed until surgery and follow-up. Collected data were submitted to analysis. Results: Only 13 patients (22%) had received correct information about their lesion, prognosis concerning recurrence, and about the need of surgery and expert follow-up in recurrent cases. None of our patients received proper information about type and duration of immobilization. Conclusion: None of our patients had received proper orientation to remain immobilized for four weeks, and the types of immobilization vary from a handmade sling to a manufactured Velpeau. Most of our patients (78%) did not receive proper orientation about specialized follow-up and surgery after their second episode of dislocation. The time for a specialized appointment with shoulder surgeon ranges from four to six months, with 1-100 dislocation episodes at the moment of surgery.

Keywords - Shoulder joint; Shoulder dislocation; Epidemiology

INTRODUCTION

We have a large deficit in health care in our country. Patients without health insurance have great difficulty finding public healthcare services with specialists to address the diverse clinical or surgical conditions, including orthopedic conditions.

Many patients with recurrent traumatic anterior dislocation of the shoulder who could be treated surgically in an early period take a while to receive medical care and surgery due to lack of proper guidance at the time of their first episode.

There are studies in the literature reporting a worse prognosis of the outcome of surgical treatment when patients are treated after several episodes of dislocation. The higher the number of dislocations, the greater the degree of difficulty of their treatment due to capsulo-ligamentous and glenoid labrum disinsertions – Bankart lesions and lesions of other shoulder structures (1-3).

Boileau et al. (4) showed that distension of the inferior glenohumeral ligament, as a result of plastic deformation suffered due to repeated episodes of dislocation,
and/or subluxation, is a factor of recurrence after surgery to correct the instability.

For the complications of recurrent dislocation of the shoulder, Buscayret et al.\(^4\) found a statistically significant relationship between the number of episodes and the development of osteoarthritis of the shoulder.

The aim of our study was to determine 1) whether patients suffering their first episode of traumatic dislocation of the shoulder are instructed to sustain immobilization for a minimum period of four weeks and what type of immobilization was prescribed, 2) after how many episodes of dislocation the patients were informed of the necessity of surgery, 3) how long it took patients to get follow-up with a shoulder surgery specialist, 4) how many episodes of dislocation patients had had at the time of surgery.

**METHODS**

From May to July 2007, 61 patients were treated for recurrent traumatic dislocation of the shoulder in our outpatient clinic. Forty-four patients (72.14%) had previously undergone surgery and 17 (27.86%) were awaiting surgery. Of the total patients, six were female (9.84%) and 55 were male (90.16%), ages ranged from 18 to 59 years (mean age of 31 years and three months).

The average age of the female patients was 32 years and four months (between 22 and 41 years) and of the male patients was 31 years and two months (between 18 and 59 years).

The average follow-up period of the operated patients was 11.7 months (between one and 36 months).

Among the 61 patients, the average age at first episode of dislocation was 24 years (between 11 and 39).

Patients were interviewed and answered a standardized questionnaire prepared by us, which contained questions related to the mechanism of the first dislocation, guidelines received for the treatment of the acute event and follow-up, time required for obtaining follow-up and surgery, time at which the patient received appropriate guidance and referral for surgery, and the number of dislocation and/or subluxation episodes at the time of surgery, in operated cases (Chart 1)

**RESULTS**

In the treatment for the first and second episodes of dislocation, only 13 patients (22%) received appropriate guidance about their injury, a prognosis for recurrence, the need for surgery and the need for specialized treatment, taking on average four months to obtain follow-up care (between one and 14 months). Of these patients, nine had already undergone surgery and had taken, on average, five months to obtain follow-up care; at the time of surgery they had an average of 10 episodes of dislocation (between one and 30 episodes).

When the guidelines were received between the third and tenth episode of dislocation, which occurred in 24 patients (39%), the time interval for obtaining follow-up was six months (between one and 60 months), the number of episodes at the time of surgery among the surgical patients (16 patients) was 11 on average (between four and 30). The remaining 24 patients (39%) received the guidelines after the 10th episode of dislocation, obtaining follow-up care after five and a half

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**Chart 1** – Questionnaire used for assessment.

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>Time/immobilization</th>
<th>Episodes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Was there trauma in your first episode of dislocation?</td>
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<tr>
<td>Did you receive guidance on how to treat your first episode of dislocation?</td>
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<tr>
<td>Did you remain immobilized for four weeks after your first episode of dislocation?</td>
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<tr>
<td>Using what kind of immobilization?</td>
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<tr>
<td>Were you informed at the time of your first episode of dislocation about the need for surgery if new episodes occur?</td>
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<tr>
<td>Did you receive a referral for specialized treatment of your dislocations?</td>
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<tr>
<td>After how many episodes?</td>
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<td></td>
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<tr>
<td>How long did it take to get specialized care?</td>
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<tr>
<td>How many episodes of dislocation at the time of surgery?</td>
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</tbody>
</table>
months on average (between one and 60 months); had on average at the time of surgery, when operated (19 patients), 29 episodes of dislocation (between 11 and 100 episodes) (Table 1). Considering the entire group, patients received appropriate guidance about their injury and the need for surgery on the 13th episode of dislocation and, when they had undergone surgery, had 18 episodes of dislocation, on average.

The variation in the number of episodes at the time of surgery and the time required to obtain specialized medical care are shown in Figures 1, 2, and 3.

No patient was instructed to remain immobilized for a minimum of four weeks after their first episode of traumatic dislocation of the shoulder, even the 13 that had been properly instructed about their injury, the prognosis for recurrence, the need for surgery, and the need for specialized treatment.

**DISCUSSION**

Several factors influence the recurrence of traumatic anterior dislocation of the shoulder after its first episode. Among them, the patient’s age at the time of the first episode, gender, participation in contact sports, involvement of the dominant limb, duration and type of immobilization used, the quality of the capsuloligamentous complex, presence of a Bankart lesion, presence of a Hill-Sachs lesion, erosion of the anteroinferior edge of the glenoid cavity, among others can be cited (6-12).

Some authors report that the greatest determining factor for recurrence is the patient’s age at the time of the first episode of dislocation, with those under 18 more likely to have recurrence of the dislocation, reaching rates of up to 86.7% (6,7,10,15).

Gartsman et al. (3) observed an increase in the severity of labial lesions during arthroscopy in patients with more than three episodes of dislocation; however, this did not negatively affect the results of surgery, including the rates of postoperative recurrence. Boileau et al. (4), in

<table>
<thead>
<tr>
<th>Episodes</th>
<th>Instruction to remain immobilized for four weeks</th>
<th>Correct guidance regarding the need for surgery</th>
<th>Time until specialized assessment</th>
<th>Number of dislocations at the time of surgery</th>
<th>Number of operated patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st-2nd episode</td>
<td>0%</td>
<td>13 (22%)</td>
<td>4m (1-14)</td>
<td>10 (1-30)</td>
<td>9</td>
</tr>
<tr>
<td>3rd-10th episode</td>
<td>0%</td>
<td>24 (39%)</td>
<td>5m (1-60)</td>
<td>11 (4-30)</td>
<td>16</td>
</tr>
<tr>
<td>After 10th episode</td>
<td>0%</td>
<td>24 (39%)</td>
<td>5.5m (1-60)</td>
<td>29 (11-100)</td>
<td>19</td>
</tr>
</tbody>
</table>
their 2006 study, observed that the predisposing factors for postoperative recurrence are substantial bone loss, either in the humerus or glenoid cavity, and capsular distention caused by repeated episodes of dislocation (Figures 4 and 5). Other authors have also shown that the erosion at the edge of the anteroinferior glenoid cavity is an important factor in increasing the recurrence rate of patients operated for recurrent traumatic anterior dislocation of the shoulder.\(^{4,13-16}\)

In our study, patients had an average of 18 episodes of dislocation at the time of surgery, which we believe to be an unreasonably high number of episodes for a disease that has its classically oriented surgical indication after its second episode. When we excluded 13 patients who were properly oriented in the first and second episodes of dislocation, we found a mean of 21 episodes of dislocation at the time of surgery among the remaining 35 patients who had undergone surgery; this is because, on average, these patients were instructed only in the 17th episode of dislocation. As Gartsman et al.\(^{3}\), we believe that a greater number of episodes produces larger capsular and labral injuries, making it difficult to repair during surgery, but we disagree with the fact that the number of episodes does not negatively influence the postoperative results, especially in recurrences, perhaps because our patients had more episodes of dislocation at the time of surgery.

Furthermore, the excessive number of episodes can lead to the erosion of the anteroinferior edge of the glenoid cavity, making treatment more difficult; in some cases it becomes necessary to use a bone graft to restore the failed glenoid cavity.

Burkhart and De Beer\(^{13}\) determined that the format of the glenoid cavity, when similar to an “inverted pear” during the arthroscopic procedure, indicates substantial bone loss of the anterior and inferior edge of the glenoid cavity, and recommended repair of the lesion with graft bone in these cases. On average, the distance from the midpoint of the glenoid cavity to its anterior edge was 11 mm. We used these parameters for arthroscopic evaluation in combination with the direct measurement of bone loss of the anteroinferior edge of the glenoid with a millimeter probe to determine the need for the use of bone grafts in patients undergoing surgery at our clinic.

Other complications can be expected due to the instability of the shoulder. Samilson and Pietro\(^{17}\) reported that the instability of the shoulder could be the cause of arthritis in patients undergoing or not undergoing surgery. They named this disease “dislocation arthropathy” and developed a classification for it. In their study, there was significant relationship between advanced age at the time of the first episode and the development of osteoarthritis of the shoulder. Matsoukas et al.\(^{18}\) published their results of shoulder arthroplasty in patients with osteoarthritis secondary to shoulder instability, with relatively high rates of complications and reoperations. It is important to note the rapid progression of the degeneration induced by several episodes of dislocation in this study, sometimes requiring arthroplasty in patients under 30 years of age.

Given that our patients have an average of 18 episodes of dislocation at the time of surgery, we believe, as Buscayret et al.\(^{5}\), that most of these patients who are receiving follow-up care in our clinic can evolve to early

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**Figure 4** – X-ray with fracture of the edge of the glenoid in a patient with ten episodes of dislocation.

**Figure 5** – Hill-Sachs lesion (black arrow) and anterior glenoid erosion (white arrow) in a patient with 50 episodes of dislocation.
degenerative arthropathy due to shoulder instability and therefore need an arthroplasty (Figures 6 and 7).

Adding to this, we observed that none of our patients was oriented well as to the duration and type of immobilization required after the first episode of dislocation.

In our opinion, some factors lead these patients to not be properly oriented in the appropriate way of dealing with their first episode of traumatic anterior shoulder dislocation. Among them is the lack of knowledge of the professionals who treated them about the appropriate treatment, the lack of understanding about the treatment oriented by the professionals who treated them and the concern of the latter in exclusively treating the shoulder dislocation episode and not the possible pre-existing lesions.

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**REFERENCES**