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ERECTA DISLOCATION OF THE SHOULDER (ABOUT NINETEEN CASES)

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ABSTRACT

Dislocation erecta humerus (dislocation of the shoulder), a rare variety of lower dislocation of the shoulder, represents 0.5% of the total dislocations described in 1859 by Middeldorp, especially in young subjects. It is remarkable for its spectacular clinical deformity (arm in the air in forced abduction with impossibility of bringing back the elbow to the body) is often complicated by fractures of the trochiter or the lower edge of the glenoid. We report 19 cases of erecta shoulder dislocations collected between 2008 and 2018. There are fourteen men and five middle-aged women (23 years old), the right shoulder was dislocated in fourteen cases, and the mechanism was direct in nine patients. No disturbance of the vascular system was observed. The radiograph of the shoulder in front of the patient showed a lower dislocation of the humeral head and a diaphyseal axis above the horizontal in all our observations. The treatment consisted of a reduction under general anesthesia followed by a Dujarier dressing for three weeks. Dislocation of the erecta-type shoulder is the typical form of inferior dislocation; its mechanism is a fall on the upper limb in great abduction or antepulsion. The clinical diagnosis is easy, confirmed by the X-ray of the shoulder. The long-term functional prognosis is excellent.

INTRODUCTION

Dislocation of the shoulder is the most common traumatic dislocation; it is defined by a total and permanent loss of contact between the humeral head and the glenoid cavity of the scapula, it is a therapeutic emergency because of the risk of compression of the axillary vessels and nerves of the brachial plexus. It is always accompanied by a vicious attitude peculiar to each pathological form. We propose to recall the variety called erecta or dislocation in mast, typical form of the lower dislocations. In our cases, we report nineteen observations collected over a period of 10 years. The aim of this work is to insist on the rarity of these dislocations and to recall their clinical, therapeutic and evolutionary peculiarities.

Methods and informants

This is a retrospective study carried out in the orthopedic traumatology service at the IBN SINA RABAT hospital center concerning nineteen cases of inferior shoulder dislocation recorded during a 10-year period between 2010 and 2018. The patients were divided into fourteen men aged 17 to 33 and five women aged 23 and 56 respectively. The cases of the right shoulder was involved nine times. The circumstances of the event were dominated by:

- Accidents on public roads (eight cases);
- Sport accidents (six cases).
- Fall from great heights (three cases);
- Epileptic crises (two cases).

The trauma was direct in nine patients by direct impact on the stump of the shoulder and indirectly by falling on the hand or the elbow in the other cases. A tenth recurrence of anterior-inner dislocation reported by one patient and a lower dislocation was reported by another patient among our informants.

The attitude of the shoulder was typical in all patients who presented with an upper limb in forced abduction, arms in the air with an impossibility of bringing the elbow back to the body (Fig. 1). No vasculonervous disorders have been reported in all cases.

The erecta variety was confirmed by the radiograph of the frontal shoulder which showed the subglenoid position of the humeral head and a humeral axis projected above the horizontal (Fig. 2).

This radiological examination also led to the diagnosis of an associated fracture with little displacement of the trochiter in a patient. The reduction was successfully carried out in all cases. It consisted of traction in the axis of the limb with slight abduction under general anesthesia, followed by compression bandage « elbow to body » ; type of Dujarier, for three weeks (Fig 3). Early rehabilitation was recommended in all patients.

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Iconography

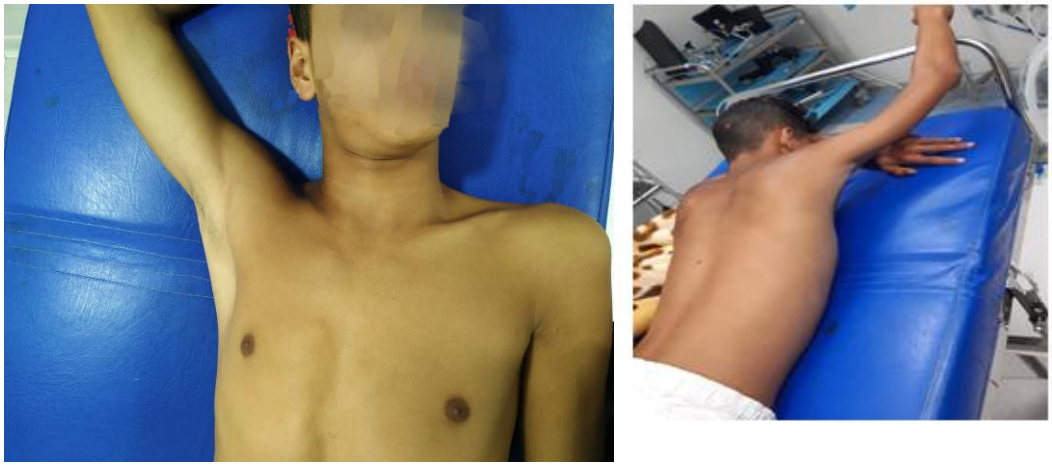

Figure 1: Irreducible shoulder attitude in abduction.

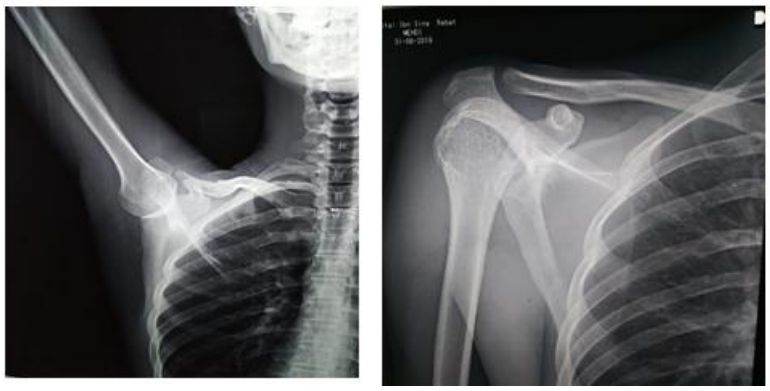

Figure 2: Subglenoidal position of the humeral head.

RESULTS

The evaluation of our results is based on the UCLA Evaluation Scale,[1] which includes an assessment of pain, function, range of motion, strength, and patient satisfaction.

One patient had a positive apprehension test, three patients had limited abduction at 120 ° and slight residual pain. Overall, the functional result was good, even excellent, in all our patients reviewed in consultation. The patient who presented the erecta dislocation as well as the patient who has recurrent antero-internal dislocation of the shoulder have been lost sight of since the last consultation where a surgical stabilization (shoulder stop) was proposed on both. We did not observe any recurrence during the follow-up.

DISCUSSION

Described for the first time in 1895 by Middeldorpf and Scharm.[2,3] dislocation erecta is a rare form of dislocation of the shoulder, the incidence of which is estimated at 0.5% of all dislocations.[4] Davids and Talbott reported two erecta dislocation mechanisms in 1990.[5]

- A direct mechanism by applying violent abduction forces on a limb initially abducted, the acromion acting as a lever for the axis of the humerus.
- An indirect mechanism following the application of a heavy overload on a limb in complete abduction.

The mechanism by simple elevation external rotation of the limb was described by Gagey and al.[6] Dahmi and al.[7] Beqqali and al.[8] The field of ligamentous

hyperlaxity has been reported in several series.[9,10] Road accidents represent the main etiology followed by sports accidents. The clinical presentation of erectile dislocation is pathognomonic with the arm traumatized in hyper abduction with an impossibility to bring back the elbow to the body.

The physical examination found a humeral head palpated in the axillary hollow, an emptiness of the glenoid and a modification of the muscular and bony reliefs. Although the positive diagnosis can be made clinically, a radiological assessment is needed to confirm the dislocation and reveal any associated lesion. The standard frontal radiograph and a true axillary profile can show the humeral head projected below the lower pole of the glenoid and a humeral diaphysis still above the horizontal.[11]

The experimental study of Gagey and al.[6] described the different anatomopathological lesions of this form through the MRI results of 24 recurrent dislocations. According to this study, the lesion of the lower glenohumeral ligament as well as the adjacent bead was constant. Dislocation erecta occurred when the tear of the lower glenohumeral ligament was longitudinal. For dislocation to occur experimentally, in seven out of eight cases, the deep face of the rotator cuff had to be disinserted.

This is a therapeutic emergency, the non bloody reduction under minimal analgesia should be done as quickly as possible but as before, the reduction can be obtained without anesthesia which is not advisable. By the most effective reduction techniques reported in the literature and the tensile traction technique.[12,13] which consists of a traction of the arm in the axis of the limb while the aid applies a counter-support on the thorax, then the arm put back into adduction and an immobilizing bending on the body is maintained for three weeks.

Radiological monitoring after reduction is always indicated. The success of the reduction and the detection of a possible iatrogenic fracture, the reeducation is the only guarantee of a satisfactory functional recovery.[14] It consists of functional and sensorimotor rehabilitation.[15]

In the Mallon et al.[16] series comprising 86 observations, axillary nerve involvement was reported in 60% of the cases and axillary artery involvement in three of the cases. Garcia et al. reported a case of bilateral erectile dislocation complicated by thrombosis of the axillary artery requiring anticoagulation.[17]

The evolution can be marked by various complications according to the age of the patient.[18] thus, the most common complication before age 45 is recurrence of luxation. After 45 years, rotator cuff lesion and major tuber fracture are possible. This form is also very likely to cause vasculonervous lesions because of the significant displacement of the humeral head.[12,13] which imposes a reduction in urgency. Indeed, Garcia et al. reported a case of bilateral erecta dislocation complicated by thrombosis of the axillary artery requiring anticoagulation.[11] In our series no vascular damage has been reported, but cases of axillary artery and brachial plexus lesions have been observed due to the proximity of the glenohumeral joint of these two elements. In the series of Mallon et al.[16] with 86 cases reported axillary nerve involvement in 60 of cases and axillary artery involvement in 3% of cases; The bilateral form of dislocation erecta has been reported by several authors.[19-20] Relwani et al. described a case of complicated erecta dislocation of an axillary artery and brachial plexus lesion in an adolescent.[11]

The prognosis

The prognosis of this variety of shoulder dislocation must be reserved.[21] Of our nineteen observations, except two cases are out of follow-up, only seventeen patients found a normal shoulder within 2 to 6 months. Two wounded have stiffness, including a severe RSD syndrome; A wounded, invalidated by the rupture of the rotator cuff had to be operated secondarily.

The post-traumatic syndrome of the upper limb is the major sequelae.[22] There is reason to fear that dislocation may require fracture of the trochiter or rotator cuff avulsion, sometimes associated with fracture of the glenoid rim.[23,24]

As for the switch to recurrent erectal dislocation, it has only been described once. In theory, it can be conceived whenever the rigorous and precise conditions of the luxating mechanism are united on a predisposed shoulder. In fact, dislocation erecta, of specific etiology and pathogenesis, appears rather as a particular manifestation of anterior instability of the shoulder.

CONCLUSION

Dislocation erecta or dislocation in the mast a rare variety of inferior dislocation of the glenohumeral joint. Easily recognized by the clinic on the Stimson triad,[25] it requires the systematic search for nerve damage and vascular involvement. However, it justifies the systematic radiography before and after reduction in search of frequent associated fractures, trochiter or glenoid rim. The *triad* reduction, bandage and early rehabilitation is the guarantee of a good evolution. Surgical stabilization may be proposed for recurrent dislocations. Even uncomplicated, its prognosis remains reserved because of the significant risk of painful stiffness.

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