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Traumatic Dislocation Erecta in a Young Cyclist: Clinical Presentation, Management, and Review of the Literature

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Abstract **Case Report**

Dislocation Erecta is a rare and uncommon form of glenohumeral dislocation, accounting for less than 1% of all shoulder dislocations. It generally occurs after high-energy trauma and may be associated with neurovascular, osseous, or capsuloligamentous injuries. We report the case of a 30-year-old cyclist who presented to the emergency department following a sports-related accident with intense shoulder pain and complete functional impairment of the right upper limb. Clinical examination revealed the characteristic posture of the arm fixed in hyperabduction. No neurovascular deficit was found. Standard radiographs and computed tomography confirmed the diagnosis of pure inferior shoulder dislocation without associated fracture. Closed reduction was successfully performed under general anesthesia using gentle axial traction, followed by immobilization and functional rehabilitation. The clinical evolution was favorable, with satisfactory functional recovery and no recurrent instability at follow-up. Through this case and a review of the literature, we discuss the mechanisms of injury, associated lesions, diagnostic features, and therapeutic management of dislocation erecta, emphasizing the importance of early recognition and prompt treatment to optimize functional outcomes.

Keywords: Erecta, luxatio, Trauma, Shoulder, Cyclist.

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INTRODUCTION

Inferior shoulder dislocation, also called *luxatio erecta*, is a rare type of glenohumeral dislocation, accounting for nearly 0.5% of all shoulder dislocations. It is considered the rarest form of shoulder dislocation. This injury may be associated with neurovascular complications as well as bone and capsuloligamentous lesions. We report a case of *luxatio erecta* of the shoulder and describe its mechanism of injury and clinical presentation.

PRESENTATION OF CASE

A 30-year-old male was brought to the emergency department after a high-energy motorcycle accident during a sports event. On admission, he complained of intense right shoulder pain associated with complete functional impairment of the upper limb. Clinical examination showed the arm locked in extreme abduction above the head, with external rotation and elbow flexion, giving the characteristic posture of *luxatio erecta*. The patient was unable to lower the limb because of severe pain. No distal neurovascular deficit was identified. Standard radiographs confirmed an inferior glenohumeral dislocation without associated fracture ***Fig1***. Urgent reduction was performed under general anesthesia using progressive axial traction with gentle counter-traction ***Fig 2***. After successful reduction, the shoulder was immobilized with an arm-to-body brace for three weeks. Rehabilitation was started immediately after removal of the immobilization. At the final follow-up, the patient had regained a satisfactory range of motion without recurrence of instability, allowing return to daily and sporting activities.

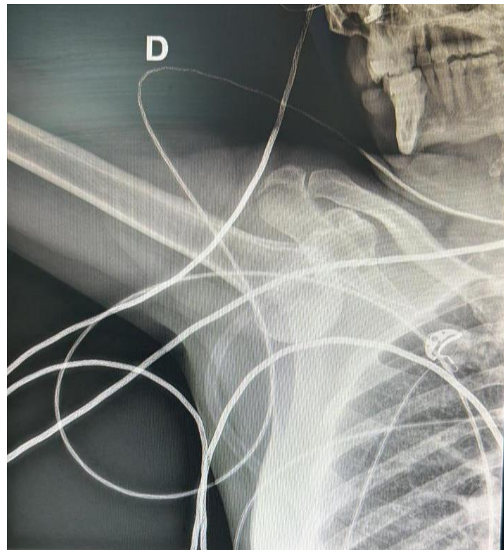

Figure 1: Radiograph of a right luxation Erecta

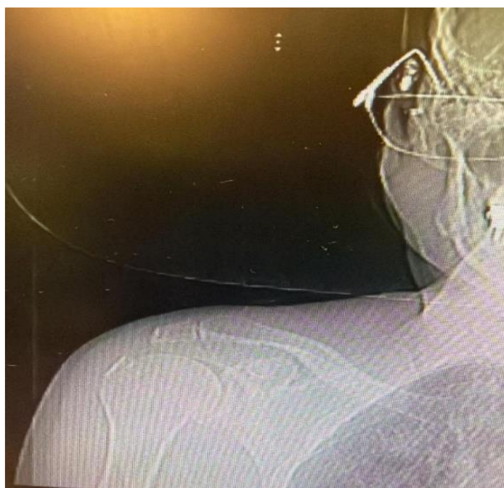

Figure 2: Post-reduction control radiograph

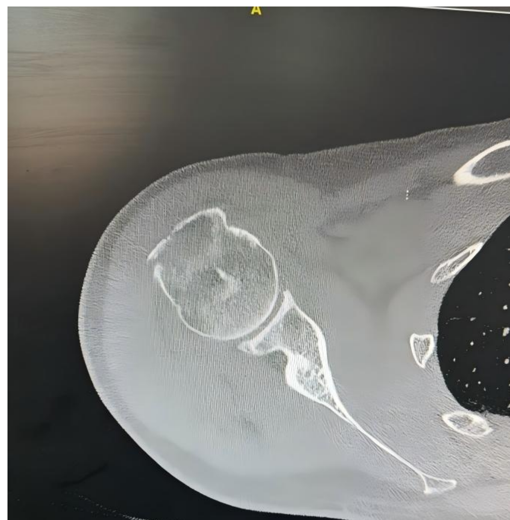

Figure 3*: Post-reduction control CT SCAN*

DISCUSSION

Luxatio Erecta is a rare form of glenohumeral dislocation, representing less than 1% of all shoulder dislocations [1]. It is generally associated with high-energy trauma and is frequently observed in young active patients involved in sports or road accidents [2]. The classical mechanism involves a violent hyperabduction

force applied to the upper limb, leading to inferior displacement of the humeral head beneath the glenoid cavity [3]. In our case, the injury occurred during a cycling accident in a 30-year-old athlete, which is consistent with the traumatic mechanisms commonly described in the literature. Clinical examination revealed the typical presentation of luxatio erecta without associated neurovascular deficit. Standard radiographs and CT imaging confirmed the diagnosis of pure inferior shoulder dislocation without associated fracture.

The mechanism of Luxatio Erecta is most commonly related to a forceful hyperabduction of the arm associated with axial loading. During this movement, the humeral neck is driven against the acromion, acting as a lever and causing rupture of the inferior glenohumeral capsule and surrounding ligamentous structures [4]. This mechanism explains the characteristic clinical posture observed in affected patients, with the arm fixed in abduction above the head. In the present case, the traumatic cycling accident likely generated a sudden hyperabduction force responsible for the inferior displacement of the humeral head. The absence of associated fracture on CT imaging suggests a predominantly capsuloligamentous injury.

The clinical presentation of Luxatio Erecta is typically characteristic and often allows immediate diagnosis. Patients usually present with the affected arm fixed in extreme abduction above the head, associated with severe shoulder pain and complete functional impairment [2]. Careful neurovascular assessment is mandatory because inferior shoulder dislocations are associated with a relatively high rate of neurologic and vascular complications, particularly involving the axillary nerve [5]. In our patient, the upper limb was locked in the classical erect position following a cycling accident, without any sensory, motor, or vascular deficit on admission. Standard radiographs and CT imaging confirmed the diagnosis of pure inferior glenohumeral dislocation.

Radiological evaluation is essential for confirming the diagnosis of Luxatio Erecta and identifying associated lesions. Standard radiographs usually demonstrate inferior displacement of the humeral head beneath the glenoid cavity, with the humeral shaft maintained in an abducted position [6]. Several associated injuries have been described in the literature, including rotator cuff tears, labral lesions, fractures of the greater tuberosity, and capsuloligamentous injuries [7–8]. Neurovascular complications are also frequently reported due to traction forces occurring during dislocation [5]. In our patient, radiographs and CT imaging confirmed a pure inferior glenohumeral dislocation without associated fracture or neurovascular injury despite the high-energy traumatic mechanism ***Fig 3***.

Urgent reduction remains the cornerstone of treatment for Luxatio Erecta in order to relieve pain and minimize the risk of neurovascular complications. Different reduction techniques have been described in the literature. The most commonly used method consists of gentle traction-countertraction applied along the axis of the limb, generally performed under sedation or general anesthesia [9]. Another technique described by Nho *et al.,* Involves conversion of the inferior dislocation into an anterior dislocation before final reduction [10]. In our patient, closed reduction was successfully achieved under general anesthesia using progressive axial traction with slight abduction, resulting in immediate clinical improvement. The shoulder was subsequently immobilized using an arm-to-body brace followed by early functional rehabilitation.

The prognosis of Luxatio Erecta is generally favorable when early diagnosis and prompt reduction are achieved. Nevertheless, delayed management may lead to persistent pain, shoulder stiffness, chronic instability, or functional limitation secondary to associated soft tissue injuries [5]. Early rehabilitation is considered essential to restore shoulder mobility and optimize functional recovery. In our patient, functional rehabilitation was initiated after the immobilization period, with a satisfactory clinical evolution. At follow-up, the patient recovered a good range of motion without recurrent instability, allowing progressive return to daily and sporting activities.

CONCLUSION

This is a rare case but still a potentially serious form of shoulder dislocation, usually resulting from high-energy trauma. Its diagnosis is mainly clinical and radiological, characterized by the typical erect posture of the upper limb. Because of the high frequency of associated neurovascular and capsuloligamentous injuries, careful clinical and imaging assessment is mandatory. Early reduction followed by appropriate immobilization and rehabilitation generally provides satisfactory functional outcomes. Our case highlights the importance of prompt management in achieving favorable recovery even in young athletic patients exposed to high-energy trauma.

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