

Case Report

Obturator Dislocation of the Hip in An Athlete: A Rare Injury

El Galiou Mohamed Rida*

Department of Orthopedic Surgery, Ibn Sina Hospital,
Faculty of Medicine and Pharmacy of Rabat, University
Mohamed V, Rabat, Morocco

***Corresponding author: El Galiou Mohamed Rida**

Department of Orthopedic Surgery, Ibn Sina Hospital,
Faculty of Medicine and Pharmacy of Rabat, University
Mohamed V, Rabat, Morocco.
Email: byisayas@gmail.com

Received: October 24, 2023**Accepted:** November 21, 2023**Published:** November 28, 2023**Abstract**

Hip Dislocation, particularly the Obturator Variety, is a rare entity, especially in sport settings. It requires reduction within a time-frame of less than 6 hours, performed by a qualified surgeon who is aware of the risk of complications. We report a case of obturator dislocation (anteroinferior) in a 56-year-old patient who is a cycling enthusiast.

Introduction

Traumatic dislocation of the hip joint is defined as the permanent displacement of the femoral head outside the acetabular cavity. It is generally the result of a violent trauma, mostly a road accident and more rarely during sports activities [1]. Anterior varieties are rare (25%). They can be pubic (anterosuperior) or obturator (anteroinferior) [2]. We report a case of obturator dislocation that occurred during a cycling race.

Observation

A 56-year-old patient, with no particular medical history, practicing cycling for 24 years, collided with a tree trunk after skidding on his bike. He immediately experienced functional impairment of his right lower limb, fixed in flexion/abduction/external rotation of the hip and flexion of the knee.

Admitted to H3 at the hospital, the clinical examination revealed the deformed position of his limb, without associated vascular or nerve injuries (Figure 1). A conventional pelvic X-ray was performed, revealing a diagnosis of anterior-inferior dislocation of the right hip (Figure 2 & 3).

Emergency reduction under sedation was performed using the following maneuvers : initial traction along the limb axis followed by flexion/internal rotation/abduction while maintaining traction. A follow-up X-ray confirmed the reduction of the dislocation (Figure 4), and additional computed tomography (Figure 5) ruled out the presence of associated lesions and/or intra-articular fragments.

A four-week discharge was prescribed with preventive anticoagulation. Resuming walking was allowed at eight weeks, and cycling at 12 weeks. At the 15-month follow-up, the patient walks without stiffness or pain and without radiological signs of osteonecrosis. Return to the initial sports level was achieved at six months.

Discussion

Traumatic dislocation of the hip is rarely an isolated injury. In the majority of cases, it is accompanied by a fracture of the acetabulum or the femoral head. Often, this injury is the result of high-energy trauma, typically associated with polytrauma from road accidents as reported by several authors [3–6]. Much more rarely, it is the consequence of a sports-related accident, often a violent one (such as motor racing, motorcycling, skydiving, skiing). Anterior dislocations of the hip are divided into two types based on the position of the femoral head : pubic or superior (type 1) and obturator or inferior (type 2) [2]. The obturator variety is observed in 6 to 10% of cases [7]. Pure hip dislocation in its obturator form has never been described in the literature in the context of cycling.

The mechanism reported for the occurrence of this type of dislocation involves a hip flexed in abduction and external rotation [3], a position found in our patient in combination with high-speed impact on the flexed knee. A similar case following a road accident (motorcyclist hit by a vehicle) was reported by Dellanh et al. In 2015 [8].

Associated injuries are not uncommon. Cartilaginous lesions of the femoral head are frequent and account for 63% of cases according to a computed tomography study conducted by Tehranzadeh [9]; these are typically posterior notches in anterior dislocations. Capsular lesions (tears or avulsions) can lead to irreducibility of the dislocation due to incarceration [10]. Muscular injuries can be accompanied by hematomas with the risk of secondary formation of osteomas, which rarely affect joint mobility [2]. Additionally, but exceptionally, anterior dislocation can be responsible for obturator and femoral nerve injuries [2].

The treatment of obturator dislocations is orthopedic. Reduction must be performed urgently after a radiological assessment. This can be challenging in a muscular subject and may require general anesthesia, or even muscle relaxation in a hemodynamically stable patient. There is no consensus on the reduction methods; Epstein [6] and Brav [11] suggest traction along the femur axis followed by gradual flexion of the hip in internal rotation and abduction while maintaining traction. Tom [3] has criticized these maneuvers: he sees no benefit in abduction during reduction as the hip is already in forced abduction. He has also condemned forced internal rotation and implicated it in iatrogenic fractures of the femoral neck described by some authors; instead, he recommends the use of an orthopedic table with axial traction coupled with lateral traction, followed by a gradual release of traction while imparting adduction and internal rotation to the hip. This highlights the difficulty of reducing this type of dislocation with a significant risk of complications that may lead the orthopedist to perform an open reduction.

Furthermore, some authors [2] report the need for three weeks of post-reduction traction followed by 6 to 8 weeks of unloading, aiming to reduce the risk of femoral head necrosis. However, there is no evidence supporting this practice. Catonné et al. [1] recommend early, relieved weight-bearing and total weight-bearing at day 15 with avoidance of external rotation for three weeks in the context of anterior dislocations.

The course of isolated hip dislocation is often favorable in 85 to 100% of cases according to the authors [12]. Two main complications exist: femoral head necrosis and post-traumatic osteoarthritis. The incidence of necrosis is 30% in adults [13], but this figure mainly concerns dislocations associated with acetabular or femoral head fractures; the necrosis rate during isolated dislocations is likely lower [1]. This risk increases with delayed reduction; Hougaard [14] reports 52.9% necrosis when the reduction is delayed beyond 6 hours. In our case, reduction was performed within 4 hours due to early diagnosis and atraumatic reduction.

Post-traumatic osteoarthritis is a frequent long-term complication of dislocations and can occur even in the absence of necrosis; with a 15-month follow-up, this complication did not occur in our patient.

Conclusion

Obturator dislocation remains rare, especially in a sports environment. Early diagnosis and reduction within a timeframe of less than 6 hours are crucial for a good outcome. Nevertheless, it is important to bear in mind the difficulty of reducing this type of dislocation.

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