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Rare Case of Injury Association of Hip Dislocation and Femoral Controlateral Fracture

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Abstract

Introduction: Traumatic hip dislocation associated with femur fracture is a rare and complex injury that occurs in the context of multiple trauma. Public road accidents represent more than 64% of the circumstances (automobiles 46% and two-wheelers 18%). Objective: Report a rare case of injury association and the speed of treatment (less than 6 hours). Clinical case: 26-year-old patient, victim of a road traffic accident. Admitted to the emergency room one hour after the trauma in a context of severe pain and absolute functional impotence of both pelvic limbs. Clinical examination reveals closed trauma to both pelvic limbs, with deformation of the right thigh, a vicious attitude of the contralateral lower limb in adduction, shortening and medial rotation. Conclusion: This is a rare injury association, which benefited from treatment within less than 6 hours.

Keywords

Femur Fracture, Coxofemoral Dislocation, Contralateral

1. Introduction

The association of a coxofemoral dislocation with a contralateral femoral diaphysis fracture is rare, only 15 cases have been reported in the literature [1]. Although the treatment of these isolated lesionsis simple, their combination makes their management difficult. Traumatic hip dislocation is defined as a permanent displacement of the femoral head out of the acetabular cavity following a violent

trauma to a hip in a favorable posture. The fracture of the femoral diaphysis, is secondary to a violent trauma, it usually occurs in the context of a polytrauma and is constantly accompanied by a more or less marked shock. These injuries occur most often in the context of a road traffic accident.

In Mali, road traffic accidents account for 64% of the circumstances of a vehicle accident (46% motor vehicles and 18% two-wheeled vehicles) [2]. The violence of the vulnerable forces involved explains the possibility of other local associations causing injury. (fracture of acetabulum, femoral head, femoral neck or femur) or distance (intra-abdominal or thoracic injury including the aorta) [2]. Left strike is twice as frequent as right. Males are more exposed (75%) with a peak in the third decade.

We report a case of coxo-femoral dislocation associated with proximal diaphyseal fracture of the femur after a road traffic accident in a young subject, and we discuss the mechanism of this uncommon entity, its therapeutic modalities and its evolutionary profile.

2. Clinical Observation

Mr M.B a 26-year-old, worker without any particular history, victim of a traffic accident, rear passenger of a motorized tricycle who fell from his mount and received the weight of the machine on his right side. Admitted to the ER one hour after the traumatic incident in a context of acute pain and absolute functional impotence of both pélvico members. The clinical examination finds a deformation of the right thigh with a cross-leg and lateral rotation of the leg, a vicious attitude of the lower contralateral limb in adduction, shortening and medial rotation (**Figure 1**). Moreover, he had a good general condition, consciousness was clear, conjunctiva and teguments were normal colored, the sensitivity and motor skills of the limbs were preserved, the posterior tibial and pedal pulses were perceived.

Figure 1. Clinical aspect of the patient in the Emergency room.

Radiological report of the face pelvis (**Figure 2**), the right femur face and profile shows:

-A diaphyseal fracture of the upper right femuris a single trait.

-An upper left coxofemoral dislocation and posterior wall fracture.

Figure 2. Radiological aspect of the lesions: upper diaphyseal fracture of the right femur and posterior coxofemoral dislocation.

Under general anesthesia a first reduction of the dislocation was perform edaccording to the Boel her method. Left hip was found stable after reduction. Then a locked Centro medullary nailing was carried out with the placement of a nail of 10mm diameter on 38mm length (**Figure 3**). The post-operative follow-up was simple. A trans-osseous tibia traction to maintain the left lower limb was implemented (**Figure 4**).

Figure 3. Postoperative control after reduction of the dislocation and osteosynthesis of the femur.

Figure 4. Trans tibial traction on Bopp splint.

3. Discussion

Coxo-femoral dislocation is common: it is the third dislocation in frequency after that of the shoulder and elbow [1]. It is often associated with periarticular fractures such as the posterior wall of the cotyle, femoral head fractures [2]. It most often occurs as a result of violent trauma to a hip in a favorable position (limb flexion, adduction, internal rotation) [2]-[4]. The inherent stability of this articulation explains the violence of causal trauma. The action was on the front of the knee flexed (**Figure 5**) [5].

Figure 5. Anterolateral abrasion of the left knee.

The association of this dislocation with a contralateral fracture of the femoral diaphysis is rare, only 15 cases have been reported in the literature [1]. Although the treatment of the isolated lesions is simple, their combination makes their management difficult. The deformation is often evident with characteristic vicious attitude which can however be altered by underlying fractures. This imposes the systematic pelvic X-Ray in case of femoral fracture [6] [7]. The discovery of knee lesions (abrasion, patellar fracture, posterior cruciate ligament injury) should be checked for coxal involvement. Vascular lesion should be eliminated by palpation of distal pulses. Similarly, the motor and sensitive exploration of the is chiaticterritoryis essential. Finally, a comprehensive general assessment is required due to the violence of the trauma. The pelvic X-Ray frontal view is the minimum required. It confirms the diagnosis and type the dislocation (**Figure 2**). It may show bone lesions with hip-centered X-Ray or three-quarter view. Orthopedic reduction is urgently needed to limit the risk of cephalic necrosis. The ideal time should not exceed 24 hours and if possible be less than 6 hours [7]-[9]. This should be done under general anesthesia and strong curarisation in a patient stabilized on the ge for this patient the reduction time was 2 hours.

Neral plane. The radiological report must have eliminated a cervical fracture or a «Pipkin» type head fracture 2. It will be done without brutality or maneuver of force, by a slow traction, energetic, without jerks, in order to make the femoral epiphysis find the reverse path of that traveled. The Boehler method is the most classical. The patient is lying in a supine decubitus (safety position for a polytraumatized) at ground level. An aid holds the pelvis firmly while the operator, placed above the patient, carries the hip in flexion and gradually pulls it vertically through

the bent knee. Abduction maneuvers are associated—external rotation in case of posterior dislocation; Radiological assessment must include pelvic X-Ray in a frontal view, a femoral X-Ray in frontal and lateral view staking hip and knee, and control lateral femur X-ray (**Figure 3**). This assessment is particularly important to look for an even Tual injury associated with the fracture of the femur:

- Hip: femoral neck fracture.
- Knee: associated fracture of the patella or upper part of the tibia.

It is also used to specify the characteristics:

- Of the fracture: localisation, aspect, direction of the line, number of fragments. Especially, a focal or propagating feature at the upper or lower ends should be carefully investigated. The therapeutic tactic will depend on the an atomical characteristics of the fracture;
- Of the femur: shape, size, length of the femur the contralateral femoral X-Ray.

The aim of surgical treatment is to promote consolidation, that is to restore the mechanical properties of the bone prior to trauma, and reduce sequelae by allowing immediate mobilization of muscles and underlying and over lying joints (stable osteosynthesis) and at best a resumption of partially normal activity (solid osteosynthesis).The surgical treatment allows to maintain the obtained reduction: reduction osteosynthesis, and to take charge of part of the stresses exerted on the diaphysis: substitution osteosynthesis. The benefits are obvious: reduction of the complications of the decubitus: rapid mobilization of the patient and of the underlying and overlying joints and reduction of the length of hospitalization. The purpose of centro-medullary nailing is to achieve stable and solid osteosynthesis offering excellent resistance not only to bending but also to torsion [9]-[11]. The use of a sufficiently strong centro-medullary nail ensures both requirements of bone surgery: ensure strict immobilization of the fracture focus and allow mobilization of the above- and underlying joints. The nail acts as a central brace but there is insufficient resistance to withstand the bending and rotation stresses when re-loading, unless sufficient bone contact takes over part of it. Thus, the strength of the nail is largely provided by the bone focus, that is to say the type of fracture which sets the limits of the re-loading (**Figure 3**).

4. Conclusion

This is a rare injury association, which has been treated with in less than 06 hours; in a first time, an orthopedic reduction of the dislocation of the left hip followed it osteosynthesis by static locking nail of the contralateral femur in the same procedure.

Conflicts of Interest

The authors declare having no conflicts of interest for this article.

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