



Original Article

Traumatic hip dislocation in Cotonou

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ABSTRACT

Purpose: Traumatic hip dislocation is an emergency. We studied their epidemiological, and therapeutic characteristics at Cotonou.

Methods: This was a retrospective study from 2006 to 2014 including all inpatient for traumatic hip dislocation, whose minimum follow-up was 12 months.

Results: Twenty-three cases in which 19 males were selected. The mean age was 39.6 years. It was mainly fracture-dislocations (17 cases). Sixteen dislocations were posterior. Reduction average delay was 41.0 h. The treatment was mainly orthopedic (16 cases). Few complications were noted: two osteoarthritis, one death. The functional results were excellent (8 cases), very good (4 cases) and good (8 cases).

Conclusion: Traumatic hip dislocations require early reduction to avoid complications.

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1. Introduction

Traumatic hip dislocations are serious injuries, resulting from high-energy trauma.¹ The posterior dislocation is the most frequently met.² The results of their treatment are not always satisfactory, with significant risk of developing osteoarthritis, which increases with the delay of the reduction.^{3–5} Tornetta quoted by Lima places the limit of this period at the sixth hour.⁶ For Brau, the decisive peak is that of the 12th hour after that, the occurrence of the avascular necrosis of femoral head increased from 15 to 47%.⁵ The aim of this work was to study the epidemiological, clinical and therapeutic characteristics of these lesions in the National reference center of Benin.

2. Patients and methods

This was a descriptive retrospective study of patients hospitalized for traumatic hip dislocation at Orthopaedic and Traumatology department at National Teaching Hospital of Cotonou from 1st January 2006 to 31st December 2014. Inclusion criteria were the occurrence of traumatic hip dislocation, the availability of a complete clinical and radiographic folder, and a minimum follow-up of 1 year. The availability of CT scan was not required. In fact, Cotonou is in a low-income country where there

is not social security. Furthermore, CT scan costs a lot for the patients (121.95 Euros) and insurances take a longtime before giving a care provision. For each patient, we identified the following epidemiological parameters: gender, age and profession. Level of autonomy before the accident according to Parker,⁷ etiology and mechanism of the dislocation, delay of admission and the delay of reduction of the dislocation, signs in physical examination, and associated injuries were listed. The dislocations were classified into central, anterior, or posterior dislocation. The Epstein classification of anterior hip dislocations, the Thompson–Epstein classification of posterior hip dislocations and the Pipkin subclassification of Thompson–Epstein grade V fractures, were used.⁸ In case of acetabulum fracture, the pathological variety according to Judet and Letournel was specified.⁹ The type of reduction was noted as well as the realization or not of traction and its duration, regardless if the treatment is orthopedic or surgical. In case of surgery, the surgical approach and the gesture made were specified. The radiologic criteria after open reduction and internal fixation of the acetabular fracture were based on the gap remaining at the fracture site after reduction. It was anatomic (0–1 mm), good (2–3 mm), or poor (more than 3 mm) according to Matta.¹⁰ Any additional immobilization was notified. Functional results were evaluated according to Postel and Merle d'Aubigné score (PMA)¹¹ at the last follow-up. Data were recorded with Epi Info 7.1.5 software, which allowed descriptive statistics in the form of numbers, percentage and average. Excel 2013 software has enabled the realization of tables and figures.

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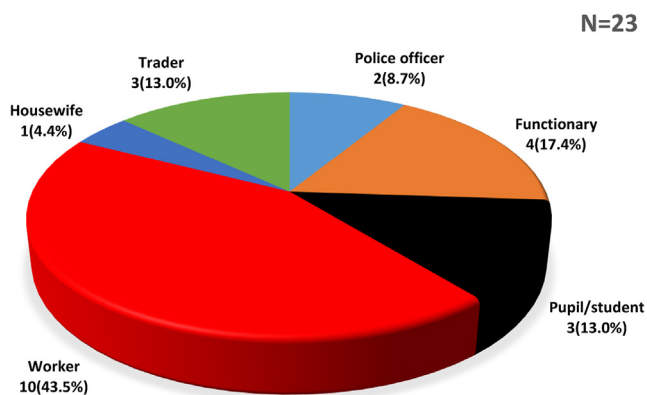


Fig. 1. Distribution of patient according to profession.

3. Results

3.1. Epidemiological aspects

In 9 years, we collected 40 cases of traumatic hip dislocations among 4826 hospitalized patients, an incidence of 0.8% of hospitalizations. But only 23 files were selected. The average age of our patients was 39.6 years (18–70 years). Nineteen patients were male (82.6%) and 4 (17.4%) were female. The sex-ratio was 4.7. The workers were most affected (Fig. 1).

All patients were fully independent before the accident (Parker score = 9). Road-traffic accident was the main etiology: 20 cases out of 23 (86.9%). We noted 2 workplace accidents (8.7%), and 1 domestic accident (4.4%). Half of the road-traffic accidents were a collision between a motorcycle and a car. The most causal mechanism found was a fall on the knee in flexion in 9 cases (39.1%). The direct impact on the hip was found in 4 cases (17.4%) and the dashboard injury in 3 cases (13.0%). In 7 cases (30.5%) the mechanism could not be precisely presented.

3.2. Clinical aspects

The admission deadline average was 33.6 h (1 h – 20 days). Thirteen patients (56.6%) were seen before the 12th hour; 8 (34.7%) other patients before the 24th hour, and 2 after 24 h. The left hip was injured 14 times (61.0%) and the right 9 times (39.0%). On inspection, the hip was in extension, adduction, internal rotation in 18 cases (78.2%); an extension, abduction, and external rotation was observed in 1 case. The shortening was evident in 11 cases (47.7%) and ranged between 2 and 5 cm. One bridging of groin was

Table 1

Distribution of patients according to the type of posterior dislocation according to Thompson and Epstein classification.

	Number	Percentage
Type I	06	37.50%
Type II	07	43.75%
Type III	01	06.25%
Type IV	00	00.00%
Type V	02	12.50%
Total	16	100.00%

found. Posterior dislocations (Fig. 2) were predominant: 16 cases on 23 (69.6%). Central dislocations are found in 6 cases (26.1%); one case (4.3%) of anterior dislocation type IC of Epstein was observed.

Among the posterior dislocations, the most common type were type II of Thompson and Epstein (Table 1).

All type V posterior hip dislocations were type IV of Pipkin. Eighteen patients (78.2%) introduced associated injuries detailed in Fig. 3.

In 17 cases (73.9%), we had a hip fracture-dislocation and in 6 cases (26.1%) a pure dislocation. Acetabulum fractures were divided as follows: 8 posterior wall fractures, 3 bicolonne fractures, 4 transverse fractures, 1 anterior wall fracture and 1 anterior column-posterior hemitransverse. The CT scan performed in six patients allowed to detect intra-articular fragments, appreciate impaction of the femoral head which went unnoticed on X-rays.

3.3. Therapeutic aspects

All patients had received analgesics. The average delay of the reduction was 41.0 h (2 h – 21 days). The latter was always performed under general anesthesia. In 91.3% of patients, closed reduction was performed using the Allis maneuver. In the other cases (8.7%), an open reduction was required. The reduction was performed before the 12th hour in 8 cases (34.8%), in which 2 cases (8.7%) were done before the sixth hour. Eleven of the dislocations (47.8%) had been reduced between the 12th and the 24th hour, and 4 (17.4%), after the 24th hour. Twenty (87.0%) patients had received traction after the reduction. This was a waiting traction of osteosynthesis (6 cases) or traction as definitive orthopedic treatment (14 cases). The duration of the traction was 45 days in case of definitive orthopedic treatment. This traction was suspended before osteosynthesis. The final treatment was 16 times (69.6%) orthopedic and 7 times (30.4%) surgical. The latter consisted after the reduction in an osteosynthesis by posterior plate screwed of the acetabulum in 5 cases (a case of additional

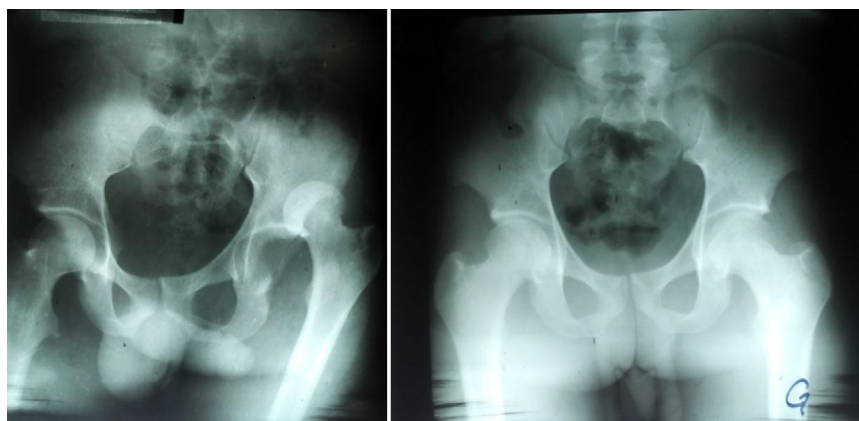


Fig. 2. X-rays of a posterior dislocation before and after reduction.

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