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Open Anterior Dislocation of the Hip in Togo

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Anterior traumatic dislocations of the hip are much less common than posterior dislocations. To date, 14 cases of open anterior dislocation of the hip associated with such injuries, acetabular and femoral head fractures and femoral vascular and nerve damage have been reported. We present a case of a 23-year-old male who sustained open anterior dislocation of the hip with ipsilateral fracture of the greater trochanter after an accident on the public highway. Additional lesions included an iliac wing fracture and a perineal wound. We report this case because of the rarity and seriousness of this injury due to its progressive complications and difficulties related to its management, which are typical to a developing country like ours.

Keywords: *Open dislocation, Hip dislocation, Osteonecrosis*

Because the hip is stable and deeply located, in a trauma context, it rarely dislocates independently due to violent trauma. Open dislocations of the hip joint are generally rare.[1] Only 14 cases of open anterior dislocation of the hip have been described in the literature till date; of which seven cases were observed in children and seven cases were observed in adults in addition to our case which would probably be the eighth case.[2]

Open hip dislocation is a serious condition because it leads to eventual arthritis and later it leads to necrosis of the head and osteoarthritis of the hip. We report this case because of the rarity and seriousness of this injury due to its progressive complications and difficulties related to its management, which are typical to a developing country like ours.

CASE REPORT

This case report was approved by the Institutional Review Board of Tokoin Teaching Hospital and the requirement for obtaining informed consent was waived. This case is of a 23-year-old young man who was brought to the surgical emergency department by firefighters after about 3 hours, in January 2013 when he was hit by a truck that probably dragged him some distance away. On admission, he showed an altered conscious state (Glasgow Coma Scale, 9) without focal signs and hemodynamic shock; on the left side, an inguinal wound about 8 cm through which the femoral head was visible in the anterior and upper position; the hip in extension, abduction and external rotation and shortening of 3 cm with no signs of neurovascular complication downstream. We also noted a perineal wound and skin abrasions adjacent to the iliac crest on the right side (Fig. 1).

After resuscitation measures, the scan revealed an open anterosuperior dislocation of the hip with ipsilateral fracture of the greater trochanter, fracture of the contralateral iliac wing (Fig. 2) and left frontoparietal hemorrhagic brain contusion. The patient was taken to the operating room 7 hours after admission. On exploring the inguinal wound, we noted a laceration of the anterior capsule of the iliofemoral ligament, medial, and lateral fibers of the iliac psoas major muscle, respectively. Cleaning and trimming were performed. The dislocation was reduced by traction and internal rotation. Suturing completed the intervention. Greater trochanteric fracture was not fixed because the implants were not available at the emergency department. Clinical evaluation showed a stable hip. After reduction, the patient was placed in transcondylar traction for 30 days. X-ray showed reduction of the dislocation with a good articular congruence, but the trochanteric fracture diastasis was about 3 mm (Fig. 3). Parenteral an-

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Fig. 1. (A) Left inguinal wound exposing the femoral head on arrival. (B) Immediately before exploration.

Fig. 2. Pelvic computed tomography showing the anterior and superior dislocation of the left hip with trochanteric ipsilateral and right iliac fractures.

Fig. 3. Pelvic X-ray after reduction showing the persistence of trochanteric diastasis.

tibiotic therapy was instituted for 7 days. Then relay treatment with oral antibiotics was performed for 1 week. He started reeducation in the unit for 15 days. At the patient's request to go home and look for financial means to support the orders of fixation of the greater trochanter, he was discharged. We could not follow up the patient before he returned for our consultation 1 year later with lameness and pain in his left hip. X-rays showed necrosis of the left femoral head and hip osteoarthritis (Fig. 4).

DISCUSSION

The majority of hip dislocations are posterior.[3] Open anterior dislocations are even rarer.[1] Our case is probably the eighth case in literature reports.

Often associated skeletal injuries include fractures of the head, neck or shaft of the femur, acetabulum and pelvis and knee, leg, ankle, foot and femoral neurovascular injury.[4-7] The case reported by de Oliveira and Machado[2] and our case are the only two cases accompanied by trochanteric fracture.

In high anterior dislocation of the hip, a violent traumatic force is applied to the inner part of the bent knee, hip in extension, abduction, and external rotation.[8] In our case, we think that the violent force generated by the accident probably transmitted the shock to the left femur, causing the greater trochanter to encroach upon the acetabular edge, and a leverage effect of the femoral head on the acetabulum pushed the femoral head out of the acetabulum, while the hip was still in extension. This mechanism could have subsequently caused a tear of the anterior capsule, and tears of iliofemoral ligaments, muscles, and inguinal skin.

He would have fallen, the pelvis caught between the truck and the road causing a comminuted fracture of the iliac wing. Trochanteric fracture which is one of the peculiarities of our case that can be explained either by

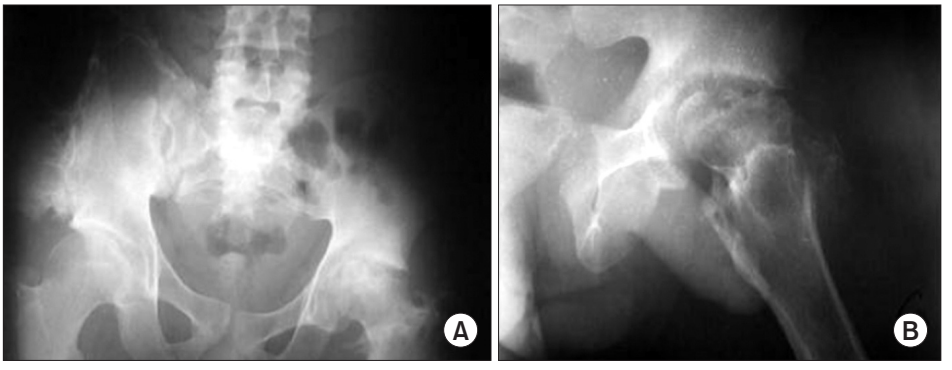

Fig. 4. Pelvic plain radiography showed advanced osteonecrosis and osteoarthritis on the left hip at 12 months postoperatively. (A) Frontal plane. (B) Sagittal plane.

impact on the pelvic bone or under strong constraints on its lateral side. The absence of associated acetabular fracture although the trauma was violent enough to cause an inguinal skin wound is another unusual aspect of this case. The absence of acetabular fracture can be explained by excessive and almost instantaneous external rotation which would have not given any time for the head of the femur to cause an impact on the wall and to fracture the wall, resulting in a trochanteric fracture through the application of lateral forces by impact on the hip bone. However, the presence of traumatic brain injury and perineal wound indicates that a complex mechanism was involved.

In terms of therapy, our patient spent 3 hours at the accident scene before he was brought to the hospital. This increased amount of time is due to lack of medical transportation for carrying injured people, as observed by Odimba[9] in less well-off African countries. It is estimated that a delay of 6 hours increases this risk from 10% to 40%.[10]

In our case, we think that more or less rapid initiation of hip osteoarthritis is due to the long time interval before reduction (10 hours), and lack of fixation of the ipsilateral trochanteric fracture which contributes to impaired blood supply to the femoral head and soft tissue lesions. Our center does not keep implants in stock due to their cost and very limited resources. The implants are prescribed for patients who will buy them from private suppliers. Most of the patients are poor (minimum wage 70 dollars). It is the entourage that often pays for the implant, and this can take several days or even months.

Anterior traumatic open dislocation of the hip is very rare. It occurs in the context of high velocity polytrauma. There are various associated lesions. An open dislocation is possible even in the absence of an acetabular fracture. To reduce the risk of occurrence of femoral head necrosis, reduction and repair of the associated lesions must be performed with all possible celerity. However, in the current African context where patients themselves have to bear the costs of their care, only a universal health insurance policy can help to guarantee their care within the conventional time period.

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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