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Case Report

Late Presenting Traumatic Obturator Dislocation-A Rare Case Report

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Abstract

We describe a case of a traumatic obturator hip dislocation in a 50-year old adult male presenting three weeks after injury. All attempts at closed reduction under general anaesthesia had failed upon which open reduction was successfully accomplished using the minimally invasive anterior approach. The patient was then discharged 5 days post-op and advised to progressively weight bear with crutches as tolerated for a month with limited extension. Follow-up of the patient after 3 months showed satisfactory recovery without signs of avascular necrosis (AVN).

Keywords: Obturator dislocation; Open Reduction (approach); Anterior inferior dislocation

1. Introduction

Traumatic hip dislocations are true orthopedic emergencies that have been associated with long term morbidity which need prompt intervention to reduce risks of complications such as avascular necrosis and secondary osteoarthritis [1].

Majority of hip dislocations in developing countries will present late to Regional referral hospitals due to a number of factors including the healthcare referral system which is geared to work effectively in limited resource settings. This poses a problem for conditions such as hip dislocations which are very time sensitive and require early intervention for conservative approaches to be successful without complications.

2. Case Report

A 50-year old male was referred from a rural hospital, 3 weeks after sustaining injury to the left hip during an accident at work where sand from a truck was offloaded on top of him. It was shortly followed by pain and inability to use the left lower limb or bear weight.

He was then rushed to the rural hospital where attempts at closed reduction were carried out under spinal anesthesia and skeletal traction applied. A control x-ray was done three weeks after, while he was on skeletal traction which showed that prior reduction attempts had failed. He was then referred to our regional referral hospital for further management.

Primary survey was uneventful on arrival at our emergency department. He complained of inability to use his left lower limb associated with pain that is dull, constant and without any specific periodicity not associated with numbness, tingling or loss of function of his left lower limb. The patient was alert, had fair general condition and was oriented to people, place and time. Vitals were within normal range apart from an elevated BP of 161/103mmHg and a heart rate of 106bpm.

On local examination the patient's left hip was in a fixed flexed (45°), abducted (30°) and externally rotated position (20°) with tenderness around the left hip. There was no neurovascular compromise or neurological impairment. Radiological investigations revealed a left obturator dislocation on AP view of the pelvis as shown (Figure 1).

Figure 1: AP view of pelvis showing left obturator dislocation.

The patient was then admitted into the ward and planned for an open reduction. His left limb positioning in theatre can be seen in Figure 2.

Figure 2: Position of left lower limb at rest in supine position. Hip was flexed (45°), abducted (30°) and externally rotated (20°)

In the theatre, closed reduction under general anesthesia was attempted which failed and necessitated open reduction. The anterior minimally invasive approach of the hip (Figure 3) was used where a 6cm incision was done in between the anterior superior iliac spine and the grater trochanter. Entry to the site of interest was done by blunt dissection with muscle sparing. The sartorius, rectus femoris and iliocapsularis muscles were all retracted medially to visualize the joint capsule.

Figure 3: Anterior approach to the hip used to gain access to the site of dislocation.

Intraoperatively, the observed joint capsule was thickened which necessitated capsulotomy. As nature does not allow a vacuum, there was presence of fibrous tissue inside the acetabulum which was removed and the femoral head guided away from the obturator canal to the acetabulum by manual manipulation after which reduction was achieved. Reduction was successful as shown in the figures below from shots taken by x-ray image intensifier (Figure 4). Stability of the hip was assessed which was found to be satisfactory. The wound was closed in layers after hemostasis was achieved. (Figure 5)

Figure 4: Image showing successful reduction intraoperatively using x-ray image intensifier (C-arm).

Figure 5: Image showing primary closure of surgical incision.

After the surgery, the patient was discharged as soon as the control x-ray was done (day 5). Post-operative radiographs show a successful reduction (Figure 6) with mild deformity of the femoral head. Patient was

then discharged after three weeks to return for follow-up at the orthopedic clinic after two (2) weeks and subsequently at three (3) month intervals or if any new complaints arise before the booked consultation date.

Figure 6: 48-hour Post-operative AP views of the hip showing successful reduction.

At 3 months follow-up the patient was doing well, could walk unassisted and could perform all his activities of daily living without limitation or pain. Range of motion on all axes was normal and the patient was satisfied with the outcome. Serial hip radiograph taken 3 months after was done as shown below (Figure 7).

Figure 7: 3-month post-operative radiographs.

3. Discussion

The hip is a ball and socket joint that has intrinsic stability which is reliant on its depth and support from the joint capsule and surrounding muscles and ligaments. Dislocations of the hip can be classified according to anterior or posterior depending on the

displacement of the femoral head relative to the acetabular wall. Posterior Dislocations are the most common (90% of cases) [2] owing to the relative strength of the anterior ligaments stabilizing the hip joint compared to the posterior ones. Epstein classified anterior dislocations into Type A and Type B which are superior (pubic) and inferior (obturator) respectively [3]. This classification was modified by Rockwood and Green into Type 1 - Superior (pubic and subspinous) and Type 2 - Inferior (obturator and perineal) [4].

An obturator dislocation however is considered by a majority of scholars to be a distinct subset due to its rarity, due to the different approach used during reduction of such dislocations when compared to other types of anterior dislocations. The mechanism of injury of obturator dislocations occur from forced abduction, external rotation and flexion of the hip joint with the neck of the femur acting as a fulcrum across the posterosuperior region of the acetabular rim [5]. This is often seen in motor vehicle crashes or falls.

Closed reduction attempts under general anesthesia are considered the treatment of choice for simple dislocations on cases presenting acutely. It should be done preferably done within 6 hours of injury as incidence of AVN increases by 10 fold for reductions done longer than 6 hours [6]. It involves applying traction in line with the femur while slowly flexing the hip followed by gentle internal rotation and adduction with gradual release of longitudinal traction [7]. Further modifications proposed use of a traction table to avoid anesthetizing the patient on the floor [8]. Surgical intervention should only be employed for refractory cases using an Iliofemoral or Ilio-inguinal approach with release of rectus femoris [8]. The approach used in our case necessitated the anterior minimally invasive approach with muscle sparing due to the already compromised bloody supply to the femoral head from the very late presentation. The anterior approach has been shown to be superior to the posterior approach with regards to better respect to soft tissues and better postoperative outcomes albeit requires a high technical competence to avoid its catastrophic complications [9].

Previous post reduction plans involved traction for 3-6 weeks for simple dislocations to give time for capsular healing followed by mobilization with progressive loading [10, 11]. However, recent studies showed that early mobilization in an extension limiting brace avoided all the complications of prolonged immobilization without any increased risk of redislocation or AVN [12].

Follow-up should be done at a minimum of 2 years after hip dislocation with serial radiographs taken every 3 months for the first year followed by 6 months intervals during the second year due to risk of secondary osteoarthritis and AVN.

Counselling on early signs preluding to these conditions must be thoroughly explained to the patient so they can return to the outpatient clinic for further investigations and management.

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Conflicts of Interest

Kilimanjaro Christian Medical Centre (KCMC) and Kilimanjaro Christian Medical University College (KCMUCo) as part of the Good Samaritan Foundation receives grants and financial aid from various charitable organizations. They declare that there is no conflict of interest in the publication of this article.

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