

Total Hip arthroplasty in a neglected obturator dislocation of Hip – A rare case report

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Abstract

Introduction: The rise of road traffic accidents involving high energy trauma has increased the incidence of traumatic hip dislocations, traumatic antero-inferior hip dislocations are relatively rare, it is uncommon due to strong ligamentous support to capsule anteriorly and inferiorly. Mechanism of injury usually being hip in abduction, flexion and external rotation with a strong external force. Here in this case report, we present a rare neglected form of such an injury.

Case report: Here we report a patient, 23-year-old male who presented to us with a limp since past 2 years, patient had a road traffic accident while driving a two-wheeler and had a head on collision with an oncoming vehicle. Patient never visited a hospital before this as he was taking osteopathic treatment for the same.

Discussion: The hip is a stable joint, and the weakest point is the posteroinferior capsule. Therefore, anterior hip dislocations are more infrequent than posterior dislocations, accounting for up to 13% of all hip dislocations. Little has been reported about old unreduced traumatic hip dislocations, and old unreduced obturator dislocation has been even less studied. Due to the infrequency of old unreduced traumatic hip dislocations, treatment options and outcome measures are scarce.

Conclusion: We report an extremely rare case of old unreduced traumatic obturator hip dislocation of the femoral head without associated fracture of the acetabulum in a 23-year-old male. Treatment for old unreduced dislocation has been somewhat empirical and no method has been proven to be superior. Open reduction may be an effective option for rare old unreduced obturator dislocation.

Keywords: Hip dislocation, obturator dislocation, unreduced, open reduction, case report

Introduction

Only 5%-13% of all hip dislocations are traumatic anterior dislocations, which occur less frequently than posterior hip dislocations [1]. According to Epstein's classification, anterior dislocation is divided into pubic and obturator dislocation based on whether the femoral head is displaced superiorly or inferiorly [2]. Obturator dislocation is a rare type of hip dislocation, accounting for about 2%-5% of all hip dislocations [3]. The occurrence of old unreduced obturator dislocation of the hip is even more infrequent [4], most of which were from the 1950s to 1980s in developing countries.

We report herein a very rare case of old unreduced traumatic obturator hip dislocation without associated acetabulum or femoral head fracture.

Case Report

We report a case of 23-year-old male who had a history of road traffic accident 2 years back when patient had a head

on collision while travelling on a two-wheeler with an oncoming four-wheeler and sustained injury to his right hip, post which patient never visited hospital and continued taking osteopathic treatment for two years but was not able to walk properly or do his routine work due to the limp. Patient presented to our hospital two years post the trauma on examination we found patient has a quadriceps gait with limb in flexion, abduction and external rotation. Patient had a fixed flexion deformity of 45 degrees and abduction deformity of 20 degrees. (Fig 1) We got imaging x-ray (fig 2) CT scan (fig 3) which confirmed obturator dislocation of the hip with arthritic changes of the affected side. Patient was operated after a thorough counselling and written consent, a southern moores approach (fig 4) was used and total hip arthroplasty was performed fig 5 shows the post operative xray. Clinical post operative pictures are shown in fig 6.



Fig 1: Showing preoperative clinical pictures



Fig 2: pre operative Xray showing obturator dislocation of right hip



Fig 5: Showing postoperative x-ray

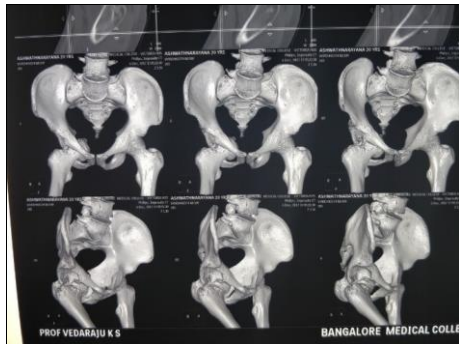


Fig 3: CT scan showing dislocated hip with obliteration of acetabulum

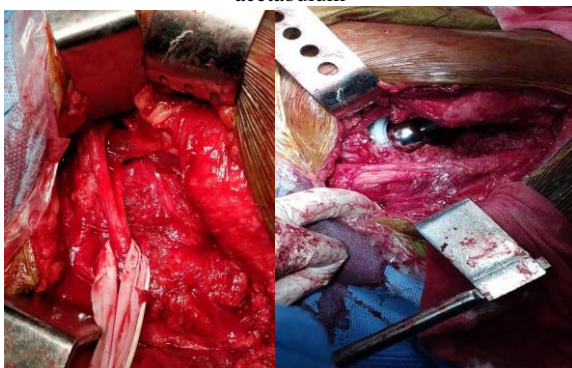


Fig 4: Showing intra operative images with prosthesis implantation





Fig 6: Showing postoperative clinical images

Discussion

Any hip dislocation lasting more than 72 hours is regarded as neglected, despite the fact that the precise definition of an old, unreduced hip dislocation is not recognised [5]. The majority of reports on elderly, unreduced hip dislocations come from underdeveloped nations due to poorly coordinated health systems and insufficient tools for diagnosing and treating injuries [6]. Old unreduced hip dislocations have received little attention, while old unreduced obturator dislocations have received even less research.

The posteroinferior capsule is the weakest part of the stable hip joint. As a result, posterior hip dislocations are less common than anterior ones [7]. A force exerted on an abducted hip joint causes it to flex and externally rotate, which causes the femoral head to dislocate forward and cause an anterior dislocation [8]. The degree of flexion at the time of damage determines the final position of the femoral head. The anterior dislocation can be classified as either pubic (type I) or obturator (type II) dislocation, according to Epstein's categorization [9]. The most uncommon type of hip dislocation, known as obturator dislocation, accounts for 2%–5% of all hip dislocations [10] and is typically brought on by falls. Obturator dislocation, as was the case in our report, which represents 2%–5% of all hip dislocations [10] is the rarest type of hip dislocation and is usually caused by falls. As was the case in our report, obturator dislocation occurs when a force is transmitted from the knee to the femoral head while the limb is in a position of extreme flexion, abduction, and lateral rotation.

According to the site of the incidental fractures, Epstein and Wiss [11] further separated anterior hip dislocation into three subtypes, type B of which is accompanied with femoral head and/or neck fractures. To emphasise the value of individualised therapy, Brumback *et al.* [12] presented an improved classification of hip fracture dislocations, however it does not seem to have predictive potential. According to the time between injury and hospital diagnosis, unreduced hip dislocations are divided into four types by the modified

Garret's classification. The neglect time for types I and II is between three days and three weeks, type III is between three months and twelve months, and type IV is greater than twelve months [13].

Old unreduced traumatic hip dislocations have received little attention, while old unreduced obturator dislocations have received even less research. Based on tiny case series, there are few treatment choices and outcome indicators for elderly, unreduced traumatic hip dislocations. The options mentioned in the literature include hip fusion to arthroplasty, open reduction, high traction and abduction, closed reduction, and osteotomy.

Due to the complexity of reduction, which is typically inversely correlated with the time taken to provide appropriate treatment, closed reduction has not been as widely used as open reduction. Pai [13] reported three of 29 previously unreduced anterior dislocations, although he did not specify whether they were obturator or not. Modified Garrett's type I dislocation was successfully treated with closed reduction, while modified Garrett's type III dislocation required open reduction after strong traction and abduction failed. Both patients' outcomes were satisfactory. Another patient had a Girdlestone hip arthroplasty, but the results were not adequate.

Osteotomy of the femoral neck or trochanter for the treatment of old unreduced obturator dislocation was reported in studies by Aggarwal and Singh [14]. All patients had fixed hips with various degrees of flexion but without any abduction, accompanied by little pain that could be tolerable in daily life. Nagi *et al.* [15] reported two patients with unreduced obturator dislocations, who received a modified Girdlestone arthroplasty by taking a subcapital osteotomy to keep the possibility of total hip replacement at a later stage. Both patients had shortened legs and a full range of flexion and rotation with limited abduction. Some pain was reported with prolonged walking at the final follow-up. Total hip arthroplasty was only used for one 33-year-old male patient with unreduced obturator dislocated hip, who presented to the hospital with complaints of deformity of the right hip following a road traffic accident 6 months prior [16]. At the 18-mo follow-up, he could walk unsupported without any symptoms.

There is no consensus on the management of hip dislocation after either open or closed reduction. Post-reduction immobilization using traction or cast and non-weight-bearing were recommended for the prevention of femoral head necrosis [17]. For old unreduced dislocation, traction is not only to reduce the risk of avascular necrosis, but also to ameliorate soft tissue contracture around the hip joint.

Conclusion

We present an exceedingly uncommon instance of old non-reduced obturator hip dislocation without acetabulum or femoral head fractures in a 23-year-old man. The treatment for an old non-reduced dislocation has been somewhat experimental, with no approach having been definitively deemed superior. An open reduction could be an effective solution for these unusual cases of old non-reduced obturator dislocation with a brief period of neglect.

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