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Case Report

Obturator dislocation of the hip with ipsilateral femoral neck fracture: A case report

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ABSTRACT

Obturator dislocation of the hip associated with ipsilateral femoral neck fracture is an unusual injury. We report a case of a 40-year-old man with such a combination of injuries which was treated with an open reduction and internal fixation. He has a good follow-up result. There was no evidence of avascular necrosis on radiographs after 3 years.

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1. Introduction

Traumatic anterior dislocation of the hip associated with ipsilateral femoral neck fracture is a rare injury. Epstein and Harvey¹ defined that the factor causing traumatic anterior dislocation of the hip is forcible abduction; in this position causes femoral neck and trochanter major become tightly impinges on the acetabular rim and as a result, femoral head is levered out of the acetabulum and is vigorously pushed toward anterior part of the capsule. During this strain if the hip is in flexed, obturator type hip dislocation; if the hip is in extended, pubic type hip dislocation occurs.¹ Fractures of femoral neck may occur if this strain continues.²

We report a new case of such combination of injuries.

2. Case report

A 40-year-old man was injured in an automobile accident; he was hit by the car. He was brought to the emergency department 2 h later with pain in right hip. The vital parameters remained stable. The patient's right limb was in the attitude of shortening, adduction and external rotation. The greater trochanter could not be felt. Ecchymosis was present around the right hip. The neurovascular status of the extremity was normal. The radiographs showed a basicervical fracture of the femur with head of femur overlapping the obturator cavity (Fig. 1). CT scan was performed with the aim to have a complete assessment of the lesions to plan surgery (Fig. 2), no other injuries were present. The patient was brought to the operating room 10 h

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Fig. 1 – The antero-posterior right hip radiograph showed the severely displaced femoral neck fracture with anterior dislocation of the femoral head.

after injury. Under general anesthesia, the patient then was installed on an orthopedic table, a Watson-Jones incision was used. The head was extracted hardly from the obturator cavity with a corkscrew to provide traction in the line of the femoral head, and the basicervical fracture was reduced by traction and internal rotation and fixed with a dynamic hip screw (Fig. 3). 48 h after surgery, the patient resumed walking without support from the right side with canes, and passive mobilization of the hip was started too. The total support was authorized after 45 days. The patient was followed up by radiographic and clinical evaluations, such the mobility of the hip is limited (flexion: 70°, abduction: 5°, external rotation: 10°, adduction: 5°), and the Harris

Fig. 2 – CT scan shows the obturator dislocation with ipsilateral displaced femoral neck fracture. There are no associated acetabular injuries.

Fig. 3 – Internal fixation was done after open reduction of the fracture-dislocation.

Hip Score was to 78/100 (Fig. 4). Radiographic union was demonstrable at 12 weeks (Fig. 5), with many ectopic ossifications around the femoral head. Clinically, the patient had no pain as weight bearing, walking or running. The material was removed because he becomes annoying after the expulsion of the blocage screw, and ossification were partially removed at the same time, 12 months post-operatively. There was no evidence of avascular necrosis on radiographs after 3 years (Fig. 6).

3. Discussion

Anterior dislocation of the hip is an uncommon injury, occurring in less than 5% of all traumatic dislocation of the hip.^{3–6} The association to an ipsilateral femoral neck fracture is even more unusual.^{2,7,8} This is due to the different mechanisms of forces acting to produce these two injuries, although both of them accompany a high energy trauma in a young patient.^{2,9} Epstein and Wiss divided anterior dislocation of the hip into type A, pubic or superior, and type B, obturator or inferior.^{10–14}

Combined anterior dislocation of the hip with femoral neck fracture occurs in two steps; first, dislocation occurs before the femoral neck fracture is complete, since the external rotation force must be exerted through the intact femoral neck or through the incompletely fractured femoral neck in order to dislocate the head. The force, if it is not dissipated, then causes a complete break in the continuity of the neck, and the fragments are displaced to a considerable degree.^{2,8,9}

Fig. 4 – Clinical evaluations.

Fig. 5 – Radiographic at 12 weeks, with impaction and shortening of the femoral neck.

Fig. 6 – At latest follow-up (3 years after injury), no signs of avascular necrosis are present.

Treatment options for this rare injury include open reduction and internal fixation as it is improbable that a reduction could be accomplished through manipulation alone, since the femoral head had lost continuity with the shaft.^{7,12} One of the reports suggested that primary arthroplasty appears to be a better option considering the high risk of nonunion and avascular necrosis of the femur neck.¹⁵ Sadler and DiStefano² once performed fixation with hip screw and plate after reduction in an anterior hip dislocation associated with ipsilateral basicervical femoral neck fracture case but avascular necrosis has occurred during the follow-up, so they applied Judet-Meyers type muscle pedicle grafting 12 weeks after the injury. McClelland et al⁸ reported that they applied collarless press-fit bipolar prosthesis to a case of obturator hip dislocation associated with femoral fracture of head and neck.

In our case we applied an internal fixation by DHS after open reduction by Watson-Jones approach, and there was no evidence of avascular necrosis on radiographs at the follow-up.

4. Conclusion

Fracture pattern combining obturator dislocation of the hip with ipsilateral femur neck fracture is a rare injury. Early open reduction and internal fixation can restore the natural anatomy of the hip joint, especially in young adults.

Conflicts of interest

No benefits in any form have been received or will be received from a commercial party related directly or indirectly to the subject of this article.

REFERENCES

1. Epstein HC, Harvey Jr JP. Traumatic anterior dislocations of the hip: management and results. An analysis of fifty-five cases. *J Bone Joint Surg Am.* 1972;54:1561–1562.
2. Sadler AH, DiStefano M. Anterior dislocation of the hip with ipsilateral basicervical fracture. A case report. *J Bone Joint Surg Am.* 1985;67:326–329.

3. Izquierdo RJ, Harris D. Obturator hip dislocation with subcapital fracture of the femoral neck. *Injury*. 1994;25:108–110.
4. Mestdagh H, Butruille Y, Vigier P. Central fracture-dislocation of the hip with ipsilateral femoral neck fracture: case report. *J Trauma*. 1991;31:1445–1447.
5. Trikha V, Goyal T, Jha RK. Posterior dislocation of the hip with ipsilateral displaced femoral neck fracture. *Chin J Traumatol*. 2011;14:104–106.
6. Boyer P, Bassaine M, Hutten D. Traumatic obturator foramen hip dislocation: a case report and review of the literature. *Rev Chir Orthop*. 2004;90:673–677.
7. Mowery C, Gershuni DH. Fracture dislocation of the femoral head treated by open reduction and internal fixation. *J Trauma*. 1986;26:1041–1044.
8. McClelland SJ, Bauman PA, Medley Jr CF, Shelton ML. Obturator hip dislocation with ipsilateral fractures of the femoral head and femoral neck. A case report. *Clin Orthop Relat Res*. 1987;224:164–168.
9. DeLee JC, Evans JA, Thomas J. Anterior dislocation of the hip and associated femoral-head fractures. *J Bone Joint Surg Am*. 1980;62:960–964.
10. Epstein HC, Wiss DA, Cozen L. Posterior fracture dislocation of the hip with fractures of the femoral head. *Clin Orthop Relat Res*. 1985;201:9–17.
11. Epstein HC, Wiss DA. Traumatic anterior dislocation of the hip. *Orthopedics*. 1985;8(1):130. 132–134.
12. Amihoud S. Anterior dislocation of the hip. *Injury*. 1975;7:107–110.
13. Grundy M, Kumar N. Open anterior dislocation of the hip. *Injury*. 1982;13:315–316.
14. Toms AD, Williams S, White SH. Obturator dislocation of the hip. *J Bone Joint Surg Br*. 2001;83:113–115.
15. Maini L, Mishra P, Jain P, Upadhyay A, Aggrawal A. Three part posterior fracture dislocation of the hip without fracture of the femoral head: review of literature and a case report. *Injury*. 2004;35:207–209.