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Surgical treatment by screwing of a fracture of the medial femoral condyle by firearm: About a case

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Abstract

Fracture of the medial femoral condyle is a rare pathology. We report a case of firearm attack on the medial femoral condyle treated by screwing.

Presentation of the case: 41-year-old man with no history of intoxication following an attack at his home that we received for open trauma to the right knee.

He presented with a puncture wound on the posteromedial aspect of the thigh with severe pain in the right knee and functional impotence. The pedal and posterior tibial pulses were well perceived. The radiographs revealed an articular fracture of the internal femoral condyle with an oblique line with inclusion of the ball-type foreign body lodged in the external part of the left knee Fig 1 (Classified 33-B2 according to AO). Two days later, we carried out a debridement of the wound, an open reduction and a double screwing then extraction of the ball. The patient was seen again three weeks postoperatively with good healing of the surgical wound. There was skin disunity near the point of entry of the bullet, no purulent discharge which improved. At the final evaluation, the patient had mobility of 0° to 120° and could walk without pain with monopodal support.

Discussion: Fracture of the internal femoral condyle is rare, as with any joint injury, an anatomical reduction of the articular surface must be obtained, then solid fixation is necessary. In fractures with an oblique line, a supporting plate is necessary to counter vertical shear forces.

However, there are no anatomical plates available in our department that fit the medial femoral condyle. We used two cancellous screws. The assembly was solid with joint stability. Postoperative radiographs confirmed anatomic reduction and the patient achieved a good result.

Conclusion: Cancellous screws are an acceptable solution for internal femoral condyle fracture.

Keywords: Fracture, internal condyle, firearm

1. Introduction

Fracture of the internal femoral condyle (Classified 33-B2 according to AO) is a rare fracture [1, 2, 3]. In the event of a vertical line fracture, fixation with buttress plates is necessary to ensure stability. However, no anatomical plates are currently available in our department. We present here a case of fracture of the medial femoral condyle by firearm treated with double screwing [4].

2. Presentation of the case

41-year-old patient with no reported history of being intoxicated following an attack at home and presented to the department with open trauma to the right knee.

He presented with a puncture wound on the posteromedial aspect of the thigh with pain in the right knee and functional impotence. Pedal pulses and posterior tibial were perceived. The radiographs revealed an articular fracture of the internal femoral condyle with an oblique line with inclusion of the ball-type foreign body lodged in the external part of the left knee Fig.1 (classified 33-B2 according to AO). After 24 hours of the trauma, we carried out a debridement of the wound, an open reduction and double screwing then extraction of the bullet. The patient was seen again three weeks postoperatively with good healing of the surgical wound. There was skin disunity near the bullet entry point, which improved. At the final evaluation, knee mobility was 0° to 120° and could walk without limping with monopodal support.



Fig 1: Plain X-ray of the F/P knee showing an oblique fracture of the medial femoral condyle.

After debriding the wound we made an arthotomy, the reduction of the joint surface was carried out using a forceps forceps. Next, we placed our pins and prepared the screw beds and fixation with two cannulated cancellous screws. Postoperative radiographs were satisfactory (Fig 2).



Fig 2: F/P radiograph of the immediate postoperative knee

The patient had an uneventful postoperative recovery. Rehabilitation sessions were started from the first day. The weight-bearing protocol was as follows: Walking without support for the first 6 weeks, partial weight-bearing from the sixth week, full weight-bearing from the tenth week. At the last consultation, the patient had knee mobility of 0° to 120° lameness, could walk normally.



Fig 3: X-ray of the F/P knee 18 months postoperatively.

3. Discussion

Isolated fracture of the medial femoral condyle is extremely rare [1, 2, 3], caused by direct impact on the flexed knee during

weight-bearing [3]. Surgery is the gold standard for displaced fractures or to allow rapid return of knee function. The goal of surgical treatment is to promote early rehabilitation of the knee while restoring joint mobility, maintaining the length and alignment of the limbs, and preserving the soft tissue envelope through durable fixation that allows functional recovery during bone consolidation [5]. With vertical fracture lines, screw fixation alone may be insufficient, and a support plate must be added. However, there are no plates anatomical plates available that fit the femoral medial condyle or fracture fixation, with the exception of the relatively short plate developed for the distal femoral osteotomy.

Previous reports have shown the possibility of a screw fixation plate for the fracture [2, 6-10]. To date, however, no consensus exists on the optimal implant due to a few cases [2]. We used two cancellous screws due to lack of a plate available. The plate adapts well to the bone surface, despite a few degrees of flexion, the clinical and radiological results are good.

4. Conclusion

We used cannulated cancellous screws to treat an open gunshot fracture of the medial femoral condyle. Although the short osteotomy plate fits well and gives a good clinical result. Cancellous screws may become the method of choice for such fractures in developing countries.

5. Conflict of Interest

Not available.

6. Financial Support

Not available.

7. References

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