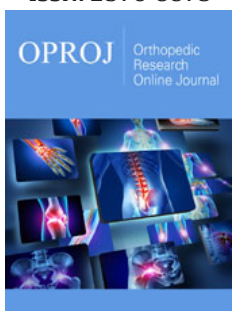


A Depressed Fracture of Lateral Femoral Condyle Case: Choosing the First Line Operative Treatment or Conservative

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Summary

Introduction: Depressed fractures of the femoral condyle are less common and are axial or rotational injuries. Distal shaft femoral fractures are usually a result of either high energy or low energy trauma.

Case presentation: A 38-year-old male fractured his femoral condyle and presented into clinic later complaining of a pain in the lateral knee region. Radiography showed depressed femoral condyle fractures that were not accompanied with either joint effusion or dislocation. Post conservative approach overcome accelerated rehabilitation program that encompasses full range of motions led to desirable surgical outcomes.

Conclusion: The minimally displaced condylar fractures received a rest approach guided by active rehabilitation rendered the dissolve impossible due to anaesthetic induction applicable for these types of patients. The systems of preparing detailed plans enabled achieving efficient passing these systems and their capturing aide.

Keywords: Femoral fracture; Conservative treatment

Introduction

Distal femur fractures are one of the common "Lower limb" Orthopaedic injuries and may result from both high-energy trauma, e.g., road traffic accidents, and low-energy trauma, e.g., falls in elderly patients [1]. Weight bearing and mobility translates to the ability and the necessity of the knee joint for flexion isn't posited as either skeletal or muscular constraint. The reduction of the skeleton shaft of the thigh bone requires sophisticated remediation strategies. Other distal femur type fractures attempt to demolish the deepest skin bony structure known as the condyles of the femur and the articular surface [2,3].

The treatment of distal femoral fractures is treated based on 'case by case' approach as it strongly depends on the type and severity of the fracture, soft tissue conditions around the fracture, age and activity level of the patient. Most of the distal femoral fractures do require surgical treatment through internal or external fixation [1].

In the past, all types of fractures about the femur, including compression fractures, were treated with operation to restore proper alignment; biomechanical function of the joint; and enable mobilization. There are however some circumstances where one may consider the possibility of non-surgical management, particularly when considering the patient's general condition and fracture configuration such as being stable and minimally displaced [4]. This method comprises active rehabilitation with careful observation to enhance functional

movements while counteracting potential challenges like misalignment and post-traumatic osteoarthritis [5]. There is recent interest in assessing the application of non-operative treatment for distal femur compression fractures and evidence suggests that non-operative management yields good results, especially with stable fractures [6,7]. This is in stark contrast with prevailing beliefs around the need for surgical fixation and supports the notion that less aggressive intervention can be beneficial when given due consideration [8,9].

Case Presentation

The imaging studies in the present case indicate a patient with a depressed fracture of the lateral femoral condyle who is a 38-year gentleman with lateral knee pain and tenderness after a twisting injury. Initial examination revealed tenderness on the lateral aspect of the knee with no effusion or joint instability.

In the above case conservative management was attempted as the first line of treatment. The patient was initially treated with two weeks of rest in a knee brace followed by non-weight bearing. Gradual increase in the range of motion of the knee joint was done after two weeks and partial weight bearing was allowed by the fourth week. Forward surgery was not indicated at any stage of his rehabilitation as the results without surgery were achieved satisfactorily.

From this presentation, it's possible to view how establishing the right diagnosis and deciding on the best treatment option can impact the quality of patient's life, showcasing femoral condyle fractures with focused attention to treatment approaches including advanced femoral condyle fractures conservatively.

The optimism of achieving the best outcome with proper non-invasive problem-solving measures alongside optimal assessment drives home an important point for almost all clinicians to

reconsider and make use of the right non-operative procedural routes before opening the operative table.

Discussion

The depressed fractures of the lateral femoral condyle are considered unusual injuries as a result of twisting mechanisms or axial loading forces. These types of fractures may show tenderness and pain at the site of injury, and may restrict movement to some extent, but within the limits of the joint capsule without joint instability or substantial effusion [10]. In the past few years, conservative treatment, when applicable, has been preferred to avoid surgical interventions, often with the aim of postoperative complication avoidance. Court-Brown et al. [11] reported that non-operative treatment of some mildly displaced distal femoral fractures generally achieved good levels of function if active monitoring and defined rehabilitation protocols were instituted.

Chien et al. [12] noted the role of advanced imaging techniques as MRI and CT, which assess the level of participation of cartilage within the surgery and help in formulating further plans. In this particular case, the clinical team implemented a non-operative approach because there was no mechanical instability, no excessive effusion, and only a depressed fracture. The approach entailed a short period of immobilization without bearing weight, followed by rehabilitation.

The relief of pain, restoration of some weight-bearing activities, improvement in the range of motion, and partial bearing by forth-week all demonstrate substantial clinical progress for the patient. This strengthens the assumption that a non-operative approach was effective. This aligns with previous findings by this case highlighting the concern around customized decisions and evidence-based trauma orthopedic decision-making regarding non-operative management and surgical interventions required in case-scenarios where a surgical intervention is not required (Figures 1 & 2).



Figure 1: Depress fracture in lateral femoral condyle (Coronal MRI).



Figure 2: Clinical follow up (full range of motion).

Conclusion

The delivered case presented here notes that for a few carefully selected patients who are considered appropriate candidates for the operatively treated depressed femoral condyle fractures, preservation of displacement, instability; conservative management could deliver favorable and effective outcomes. Detailed imaging analysis and clinical monitoring followed by a corrective rehabilitation schedule comprising exercises enhances and optimizes care pathways for patients with non-operative treatment plans.

This report highlights the need for detailed and comprehensive clinical assessments before candidates are presented with an operative approach. In choosing a rather pragmatic direction backed by sound evidence, the impact of exercises could be delivered while saving procedures deemed as unnecessary, especially in active and younger individuals suffering from orthopedic trauma. Hence, non-surgical intervention could be selected on a case-by-case basis deemed optimal through precise guidelines but preferred when managed through conservative pathways.

References

1. Tornetta P, Ricci WM, Ostrum RF, McKee MD, Olliviere BJ, et al. (2024) Rockwood and green's fractures in adults: eBook without multimedia. Lippincott Williams & Wilkins, USA.
2. Gicquel T, Najihi N, Vendeuvre T, Teyssedou S, Gayet LE, et al. (2013) Tibial plateau fractures: reproducibility of three classifications (Schatzker, AO, Duparc) and a revised Duparc classification. *Orthopaedics & Traumatology: Surgery & Research* 99(7): 805-816.
3. Millar SC, Arnold JB, Thewlis D, Fraysse F, Solomon LB (2018) A systematic literature review of tibial plateau fractures: what classifications are used and how reliable and useful are they? *Injury* 49(3): 473-490.
4. Doornberg JN, Rademakers MV, Van Den Bekerom MP, Kerkhoffs GM, Ahn J, et al. (2011) Two-dimensional and three-dimensional computed tomography for the classification and characterisation of tibial plateau fractures. *Injury* 42(12): 1416-1425.
5. Walton N, Harish S, Roberts C, Blundell C (2003) AO or Schatzker? How reliable is the classification of tibial plateau fractures? *Archives of orthopaedic and trauma surgery* 123: 396-398.
6. Charalambous C, Tryfonidis M, Alvi F, Moran M, Fang C, et al. (2007) Inter- and intra-observer variation of the Schatzker and AO/OTA classifications of tibial plateau fractures and a proposal of a new classification system. *The Annals of The Royal College of Surgeons of England* 89(4): 400-404.
7. Maripuri SN, Rao P, Manoj-Thomas A, Mohanty K (2008) The classification systems for tibial plateau fractures: how reliable are they? *Injury* 39(10): 1216-1221.
8. Brunner A, Horisberger M, Ulmar B, Hoffmann A, Babst R (2010) Classification systems for tibial plateau fractures; does computed tomography scanning improve their reliability? *Injury* 41(2): 173-178.
9. te Stroet MA, Holla M, Biert J, van Kampen A (2011) The value of a CT scan compared to plain radiographs for the classification and treatment plan in tibial plateau fractures. *Emergency Radiology* 18: 279-283.
10. Elsoe R, Larsen P, Nielsen NPH, Swenne J, Rasmussen S, et al. (2015) Population-based epidemiology of tibial plateau fractures. *Orthopedics* 38(9): e780-e786.
11. Court-Brown CM, Caesar B (2006) Epidemiology of adult fractures: a review. *Injury* 37(8): 691-697.
12. Chien A, Weaver JS, Kinne E, Omar I (2020) Magnetic resonance imaging of the knee. *Polish Journal of Radiology* 85(1): 509-531.