

Extended posteromedial approach for complex tibial plateau fracture involving posterolateral segment - Case series

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INTRODUCTION

Complex tibial plateau fracture resulted from high energy injuries always associated with high complication rates. Thus, it's always challenging and difficult for orthopedic surgeons especially when the multiplanar fractures involves posterolateral fragment. Inadequate fixation will lead to significant morbidity and knee flexion instability. CT scan plays vital role in preoperative planning when it comes to three column fixation. We report two cases with such fracture pattern and managed by similar triple plating through dual posteromedial and anterolateral incisions in Hospital Melaka.

REPORT:

First case A, a 54y/o male with no comorbid, working as bus driver has been alleged motor-vehicle accident sustained trauma to right knee. Second case B, a 41y/o Bangladesh foreigner with no comorbid, working as construction worker has allegedly fall from 4 meter height with injury to left knee.

Both patient sustained closed tibial plateau fracture Schatzker VI with posterolateral comminution after reviewing X-rays and CT scan. Both patients proceeded electively for open reduction and internal fixation. A special 'floating position' which based on lateral decubitus and lower leg able to rotate to prone position for easier access to dual incision in a single draping setting. A posterior inverted L-shaped approach used for buttress plating posteriorly the posterolateral fragment and posteromedial locking plate to maintain reduction of medial condyle fragment. Another anterolateral approach, used to fix lateral condyle fragment with variable angle lateral tibia locking plate. Bone graft inserted as well to achieve congruent articular surface.

Post operatively, case A has been regularly followed up in outpatient clinic. His wound well healed with no complication and he achieved satisfactory range of knee motion 0-120 degree as he compliant and started early immediate post-operative knee rehabilitation. He also has

been allowed for full weight bearing ambulation after 4 months and achieved full fracture union at 7 months.

For the case B, immediate post-operative range of knee motion was 0-110 degree. His wound was clean upon discharge. No further follow up as he returns Bangladesh.



Figure 1: Preoperative CT scan followed by immediate and 7 months postoperative X-rays of case A.



Figure 2: Preoperative CT scan and immediate postoperative X-rays of case B.

CONCLUSION:

Multiplanar complex tibial plateau fractures shall be fixed effectively and safely using three-column concept. Orthopaedic surgeon may consider this option of less popular extended posteromedial combined anterolateral surgical approach for good functional outcome of patient.

REFERENCES:

1. Luo C.F, *Three-Column Fixation for Complex Tibial Plateau Fractures*, J Orthop Trauma 2010 Nov;24(11):683-92.
2. Jaiswal A, *Triple plating of tibia in a complex bicondylar tibial plateau fracture*, Chinese Journal of Traumatology 2014; 17(3):183-186.