

Posterior Medial Tibia Plateau Fracture: Fixation And Outcome In HSNI

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Introduction

Tibia plateau fracture is one of the commonest post trauma periarticular fracture. Traditionally they are classified according to Schatzker and AO. Posterior tibia plateau are rather uncommon fracture pattern that do not fit Schatzker classification thus they are classified according Hohl and Moore (~10 %). These type of fracture can be confusing or even missed from the initial radiograph, therefore further investigation using CT scan is required.

Material

Our inclusion criteria for this retrospective study are closed posterior medial fracture (Type I) according to Hohl and Moore and 5 cases was included. 3 cases were fixed with conventional buttress plate and the other 2 cases were fixed with posterior medial proximal tibia buttress locking plate. Our aim of study is to look at type of fixation, range movement upon union, possible fixation failure, non union rate and infection. Range of movement will be based on the flexion-extension of the affected knee joint, with or without full extension and flexion less than 90 degree, 90- 120 degree, or more than 120. Non union is defined absence of bone healing on 2 radiographic view 9 month after surgery. Fixation failure is defined as loss of reduction, migration, failure of implant in which revision surgery was compulsory. Infection was considered with or without evidence of organism, if antibiotic or debridement deemed necessary. Post operatively patient started on CPM (Continuous Passive Movement) and upon discharge patient was given regular physiotherapy to improve the range of movement and prevent adhesion.

Result

All 5 cases had achieved union within 6 month of the post operative period. All were able to fully extend the affected knee joint, with regular physiotherapy all were able to flex more than 120 degree within 6 month post operative period. Non of our patient develop fixation failure, and only one of them had superficial soft tissue infection which resolved over a course antibiotic without any surgical debridement.

	1	2	3	4	5
Implant	covnt	covnt	convt	locked	locked
Union	<6/12	<6/12	<6/12	<6/12	<6/12
ROM	>120	>120	>120	>120	>120
Failure	nil	nil	nil	nil	nil
Infection	nil	nil	nil	nil	superficial

Discussion

Conventional surgical approaches are rather anatomically challenging due to location of the fracture, they may also be difficult to reduce and stabilize. Brunner et al (2) advocated a posterior T-shaped anti-glide plate, which they thought offered better stability. Nevertheless the basic principal of anatomical reduction and fixation, good soft tissue handling and postoperative physiotherapy also play a major role in improving post operative outcome. A proposed classification, by Hong-Wei et al (1) published in 2015, to address the posterior tibia plateau fracture which complement the traditional Schatzker and three column classification.

Type I	Split fracture of posteromedial condyle
Type II	Split fracture of posterolateral condyle
Type III	Collapsed of posterolateral condyle
Type IV	Split and collapse of posterolateral condyle
Type V	Split of posteromedial condyle and collapse of posterolateral condyle

Conclusion

Tibia plateau fracture with posterior medial component is a complex injury, it requires proper preoperative planning, advance radiological modalities (CT 3D reconstruction), a high level of attention to details, proper instrumentation and good surgical technique to achieve favourable outcome without any complication.

Reference

- 1.Hong-wei Chen, Chang-Qing Chen, Xian-Hong Yi; Posterior tibial plateau fracture; a new treatment-oriented classification and surgical management; Int Journal Clin Exp Med 2015;8(1)472-479.
- 2.Brunner A, Honingmann P,Horisberger M and Babst R. Arch Othop Trauma Surg 2009;129:1233-1288