

Comminuted Tibial Eminence Fracture with Posterior Tibia Plateau Fracture

¹Zahri MH; ²Fakru NH; ³TM Shihabudin TM

^{1,2,3}Orthopaedic Department, Universiti Sains Malaysia, Kubang Kerian, Malaysia

INTRODUCTION

Tibial plateau fractures are articular injuries which have a broad spectrum of clinical presentations and are frequently associated with long term complications. The complete understanding of the personality of these fractures is the key element in the decision-making process when choosing the best possible treatment.

CASE

A 15-year-old girl presented with pain and swelling right knee following a trauma which affecting her ambulation. Examination revealed effusion of right knee with tenderness on palpation especially at popliteal fossa. Right knee range of motion was limited 0-80° due to pain. The distal neurovascular of right lower limb was intact. Plain radiograph showing fracture of tibial eminence together with posterior cruciate ligament (PCL) avulsion fracture. Computed tomography (CT) scan right knee was done to look for the exact configuration of the fracture pattern. It showed comminution of tibial eminence fracture at the anterior cruciate ligament (ACL) insertion which extend posteriorly to posterior tibia plateau involving the PCL insertion site.(Figure 1)

She underwent open reduction and screw fixation with buttress plating for the posterior tibia plateau and and arthroscopic pull through suture for right ACL with tibial eminence fracture. Posterior approach was done for the posterior proximal right tibia fracture which showed PCL attachment to the main fracture fragment with comminution at the lateral side. The main posterior fragment was buttressed with a plate and 2 cannulated half-threaded cancellous screws were inserted near the PCL insertion site. Arthroscopically, there was comminuted fracture of right tibial eminence at the ACL insertion site which

was hold with a pull-through suture through a tibial tunnel and tied to an anterior screw with washer. Postoperatively, the right lower limb was protected with a cylinder slab for 6 weeks with the exception during range of motion exercise. Quadriceps strengthening was started and passive flexion of the knee done in prone position to protect the PCL. Post-operative radiograph showed good reduction.(Figure 2) Follow-up at 3 months post-op showed good range of motion of knee with no laxity noticed on examination.



Figure 1: Plain radiograph right knee and CT scan right knee (sagittal view and 3D reconstruction)



Figure 2: Post operative plain radiograph right knee

CONCLUSION

CT scan is crucial to provide detail and accurate configuration of the fracture involving the proximal tibia which can help to determine the best surgical approach and fixation method for the patient.

References

1. J. Schatzker, M. Kfuri. Revisiting the management of tibial plateau fractures. *Injury* 53 (2022) 2207–2218
2. M. Kfuri, J. Schatzker. Revisiting the Schatzker classification of tibial plateau fractures. *Injury, Int. J. Care Injured* 49 (2018) 2252–2263