Addressing Posterior Column Tibial Plateau Fractures From Posterior Approach In Prone Position: A Case Report

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INTRODUCTION:

Tibial plateau fracture are intraarticular fracture that require stable fixation with anatomical reduction of articular surface. Posterior column tibial plateau fracture stabilization has been recognized as important in maintaining a well-reduced joint line. Inadequate reduction or stabilization has been found to increase the risk of surgical failure[2]. Reduction and stabilization of these posterior column can be accomplished in a variety of ways. Prone positioning provides improved access to the posteromedial and posterolateral tibial plateau[1,3].

REPORT:

A 42years old lady without comorbid, involved in motorvehicle accident. She sustained pain and swelling specifically around her right knee and could not ambulate post trauma. No open wound was seen and neurovascular status was intact. A plain radiograph image of her right knee in AP and lateral view showed tibial plateau fracture, suggestive of shatzker II.

Proceeded with CT scan imaging of the knee, which showed involvement of posterior column, both posteromedial & posterolateral column with central depression (figure 1). We decided for biplating of both column through posterolateral & posteromedial approach in prone positioned.

Patient was positioned in prone. Started with posteromedial approach, a longitudinally incision starting just above the joint line and running along the medial border of gastrocnemius muscle. Important structure was identified and protected. The posteromedial column fragment was visualised and was able to reduced with simple extension of the knee. Posteromedial locking plate, variable angle was used and placed over posteromedial column and further compressed to the bone with cortical screws which act as a buttress.

Then, proceed with posterolateral approach to reduced the posterolateral column segment. A straight longitudinal incision is made from the medial aspect of the biceps femoris tendon proximally to the posteromedial border of the fibula distally. The common peroneal nerve (CPN) isolated and retracted laterally for protection and the popliteus muscle and tendon are mobilised medially. The posterolateral column fragment was visualised. Central segment elevated and filled with synthetic bone graft. The segment was once again reduced with simple extension of the knee. A broad variable angle locking compression plate of distal radius was used and placed over posterolateral segment and act as buttress.

The knee examined through a range of motion and varus/valgus stresses. Post op plain radiograph showed articular surface was well reduced (figure 2). Patient was allowed partial weight bearing after 2months post op. At 3months, radiological images showed fracture well united and patient able to achieved range of motion of the knee 0-120 flexion (figure 3).

Figure 1: CT of right knee

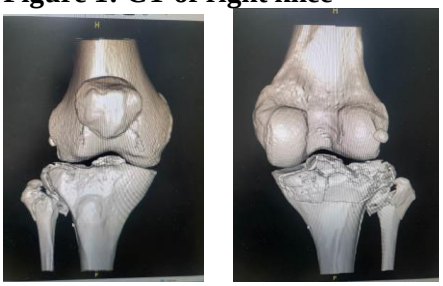

Figure 1: CT of right knee

Figure 2: Post op xray

Figure 3: At 3months

CONCLUSION:

Multiple approaches have been described to access the posterior medial &lateral tibial plateau. Both posteromedial & posterolateral approach in prone position offers a safe alternative to address posterior column fractures and allows for direct visualization of the fracture fragment for accurate reduction and plate placement. Utilization of this approach in prone position will maximize treatment of posteromedial and posterolateral fracture of tibial plateau.