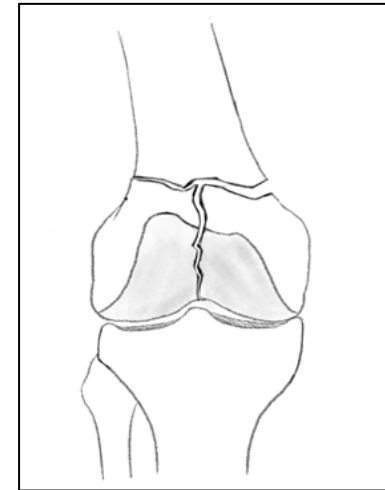
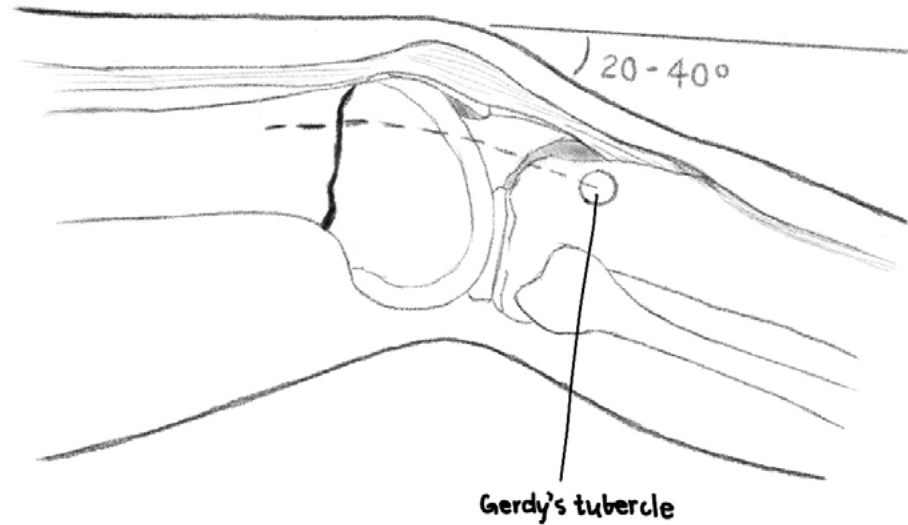


Figure 1. Patient Position

The patient is prepped, placed in supine position on a radiolucent table, and draped. The injured limb is flexed over a knee bolster to relieve the tension from the gastrocnemius muscle. An additional padded bump is placed under the ipsilateral hip to neutralize external rotation. A C-arm is placed contralateral to the injured limb.



33 C1 distal femur fracture  
(anterior view)

#### Figure 2.1 Anterolateral approach and arthrotomy

The incision is marked from the starting point, at the metaphyseal region (4-6 cm proximal to knee joint), to the ending point at Gerdy's tubercle. Approximately an 8 cm skin incision is made with #10 blade scalpel in line with the mid-axis of the femur shaft. A cautery is used to dissect the subcutaneous tissue to reach the IT band, which is subsequently divided with scissors following the IT band fiber orientation. The fibers of the IT band curve anteromedially toward the tibial tubercle.

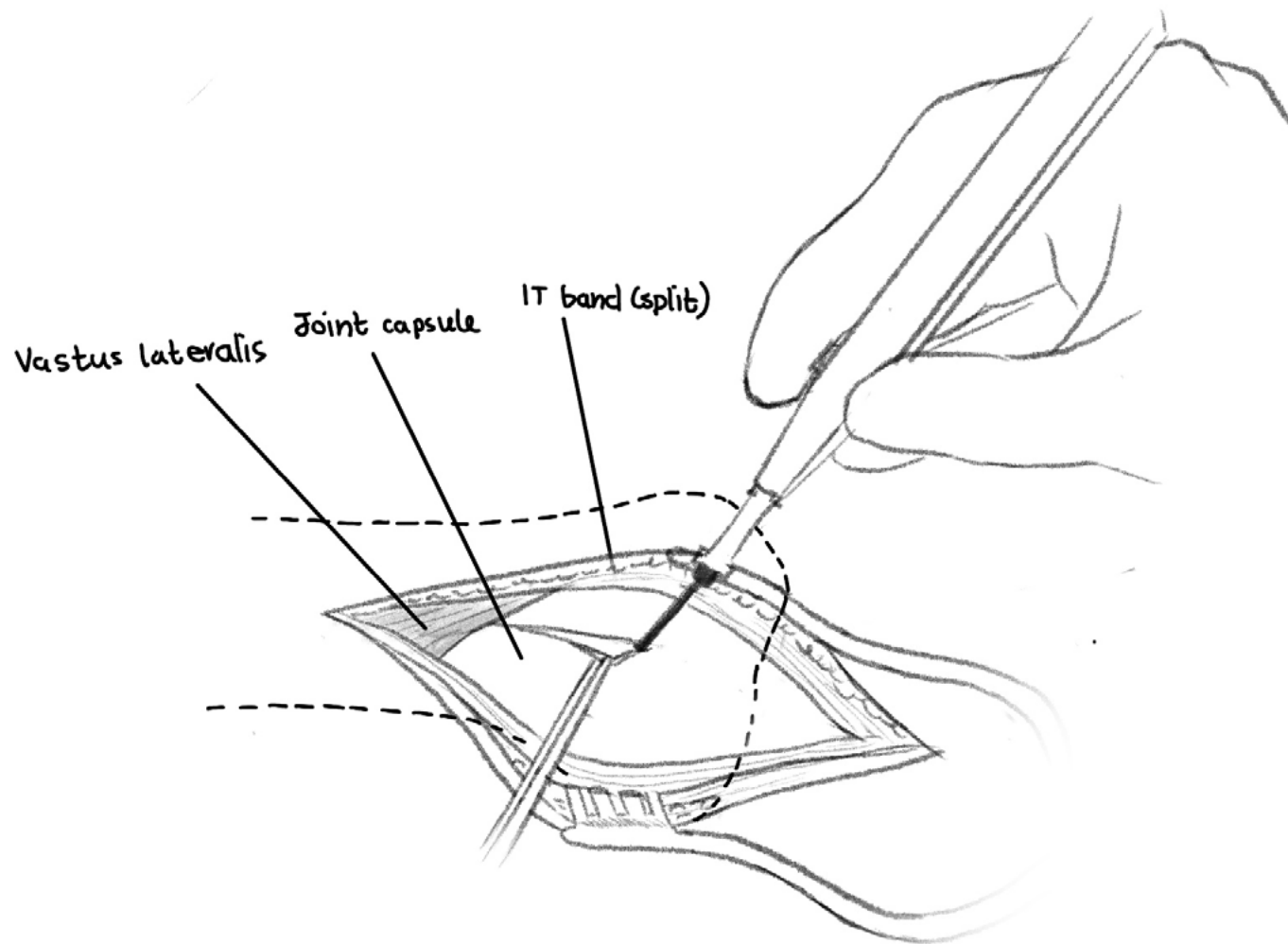


Figure 2.2

The lateral border of the patella and lateral parapatellar arthrotomy incision (1cm lateral to lateral border of patella) are marked. The joint capsule is incised to expose the distal femur for reduction. Avoid injuring the meniscus and articular cartilage.

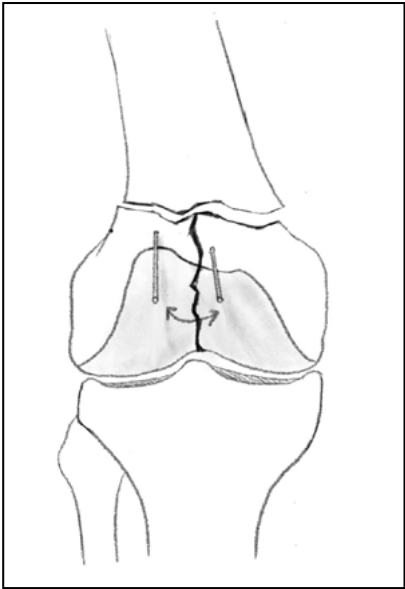
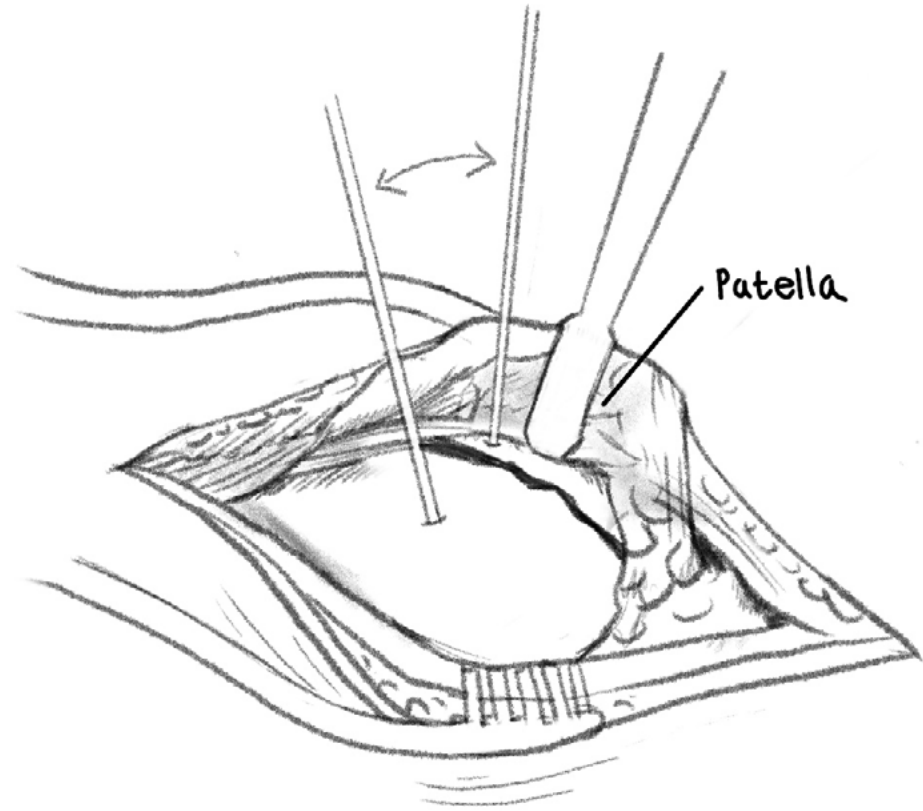


Figure 3.1 Condylar reduction & fixation  
The intra-articular fracture is located, exposed, and cleaned with irrigation. A joystick technique with 2.0 or 2.4 mm k-wires may be used to achieve correct orientation.

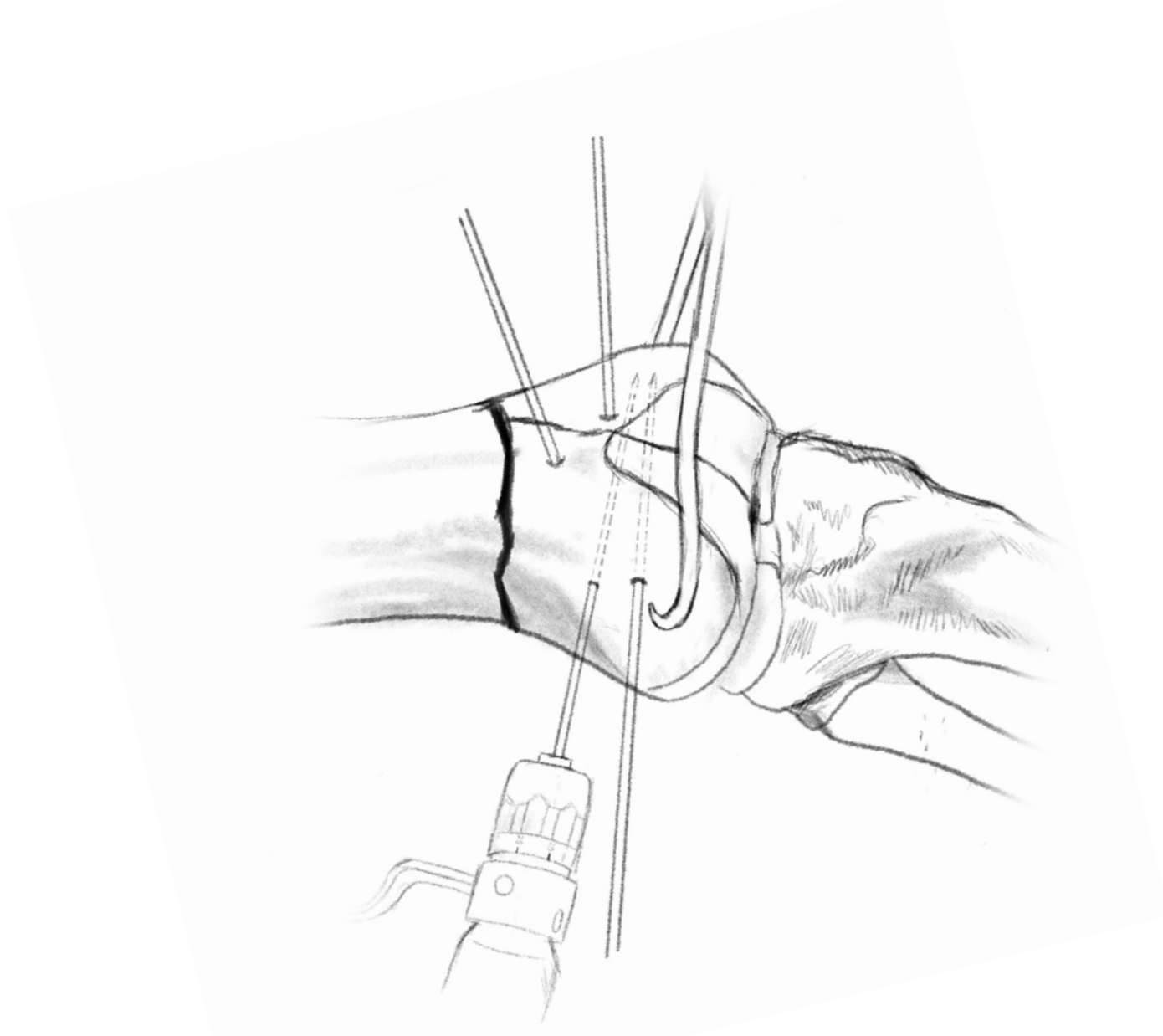


Figure 3.2

Clamp the condyles together with a large weber clamp. Take note to avoid clamping the condyles too anteriorly as this may produce a posterior gap. After anatomic reduction is obtained, provisional fixation with two 2.0 mm k-wires are driven through the cortex centrally to ensure rotational stability.

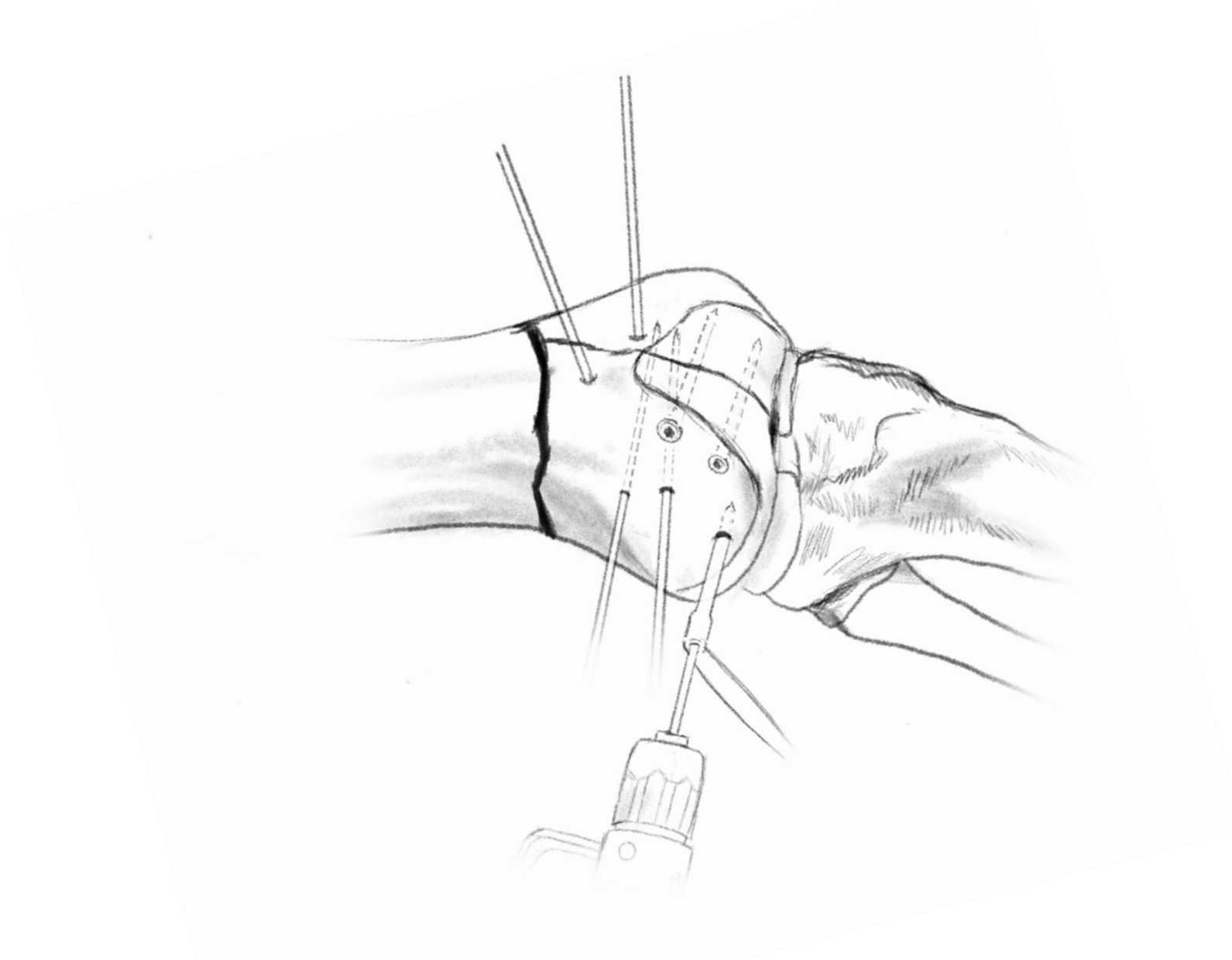


Figure 3.3

Compression of the joint block is achieved using two to three 2.7 or 3.5 mm fully threaded lag screws peripherally in anticipation of the plate placement. Screws should be placed perpendicular to the fracture plane. The corresponding drill bit with the drill guide is used to create a glide and thread hole, which is then tapped. **Countersink prior to screw insertion.** Check the alignment with the fluoroscopy and readjust prior to final tightening. Remove the k-wires.

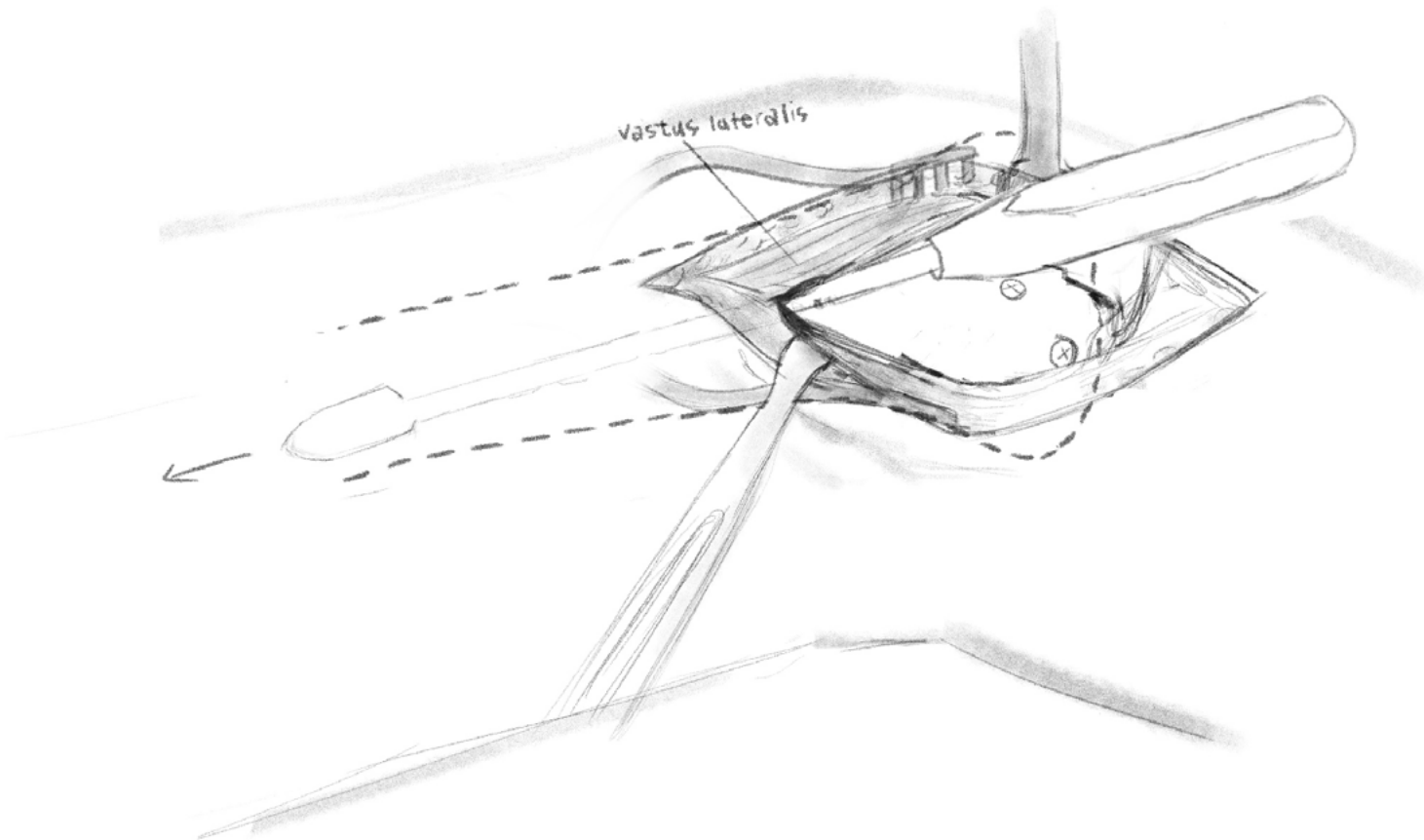


Figure 4.1 LISS Plating

Under fluoroscopy determine length of the plate needed. Insert a periosteal elevator, between the periosteum and vastus lateralis, in preparation for submuscular plate insertion.

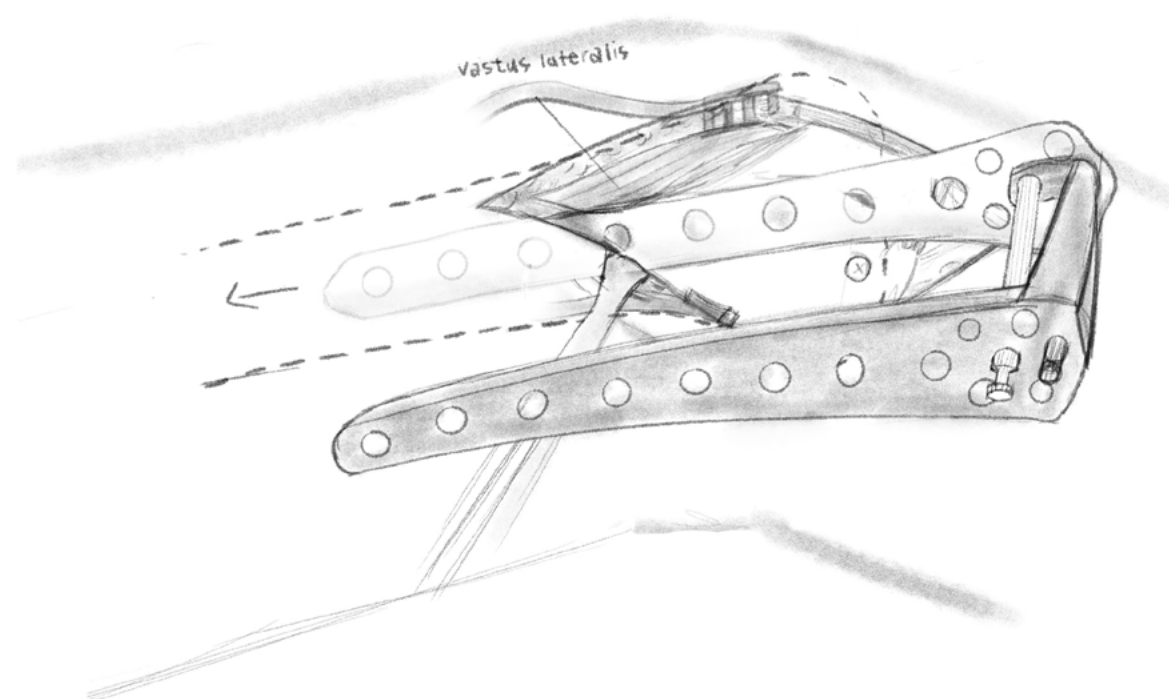
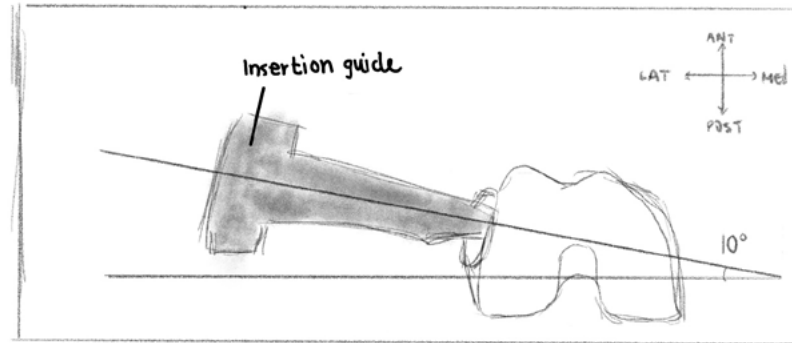


Figure 4.2

Assemble the insertion guide and screw the fixation bolt into the LISS plate. Insert the plate between vastus lateralis and the femur, sliding proximally and distally for tactile feedback, sustaining contact with the bone throughout the insertion. The Insertion guide will rotate 10 degrees to femoral shaft when positioned properly.



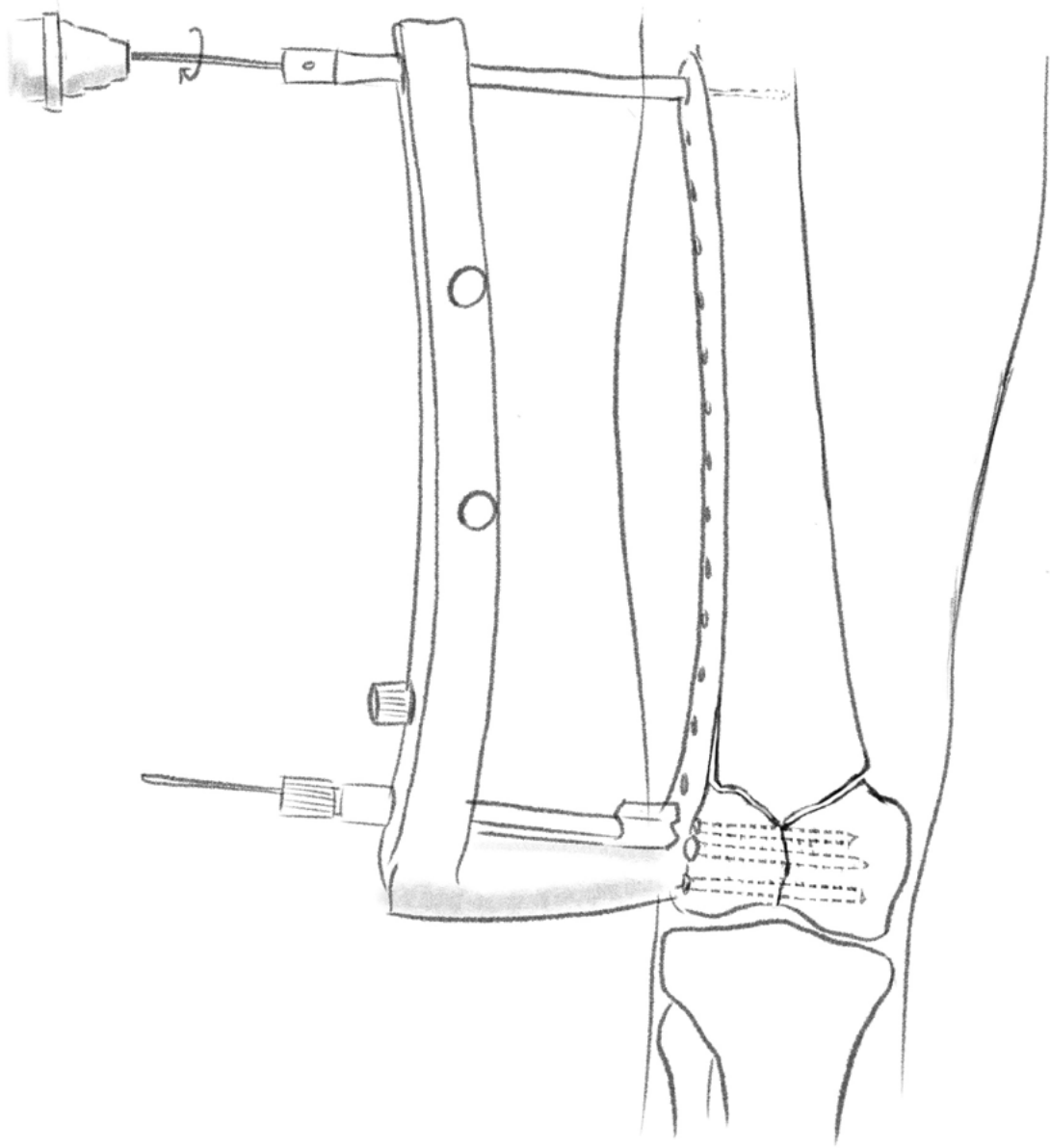


Figure 4.3

Provisional fixation with a 2.0 mm k-wire is placed through the fixation bolt. Confirm the plate position with the fluoroscopy. Mark the proximal hole incision with a skin impression using a 5.0 mm trocar. Remove the trocar and make a stab incision 2-3 cm long. Reinsert the insertion sleeve and trocar. Remove the trocar and insert a 2.0 mm K-wire through the stabilization bolt. Confirm positioning.

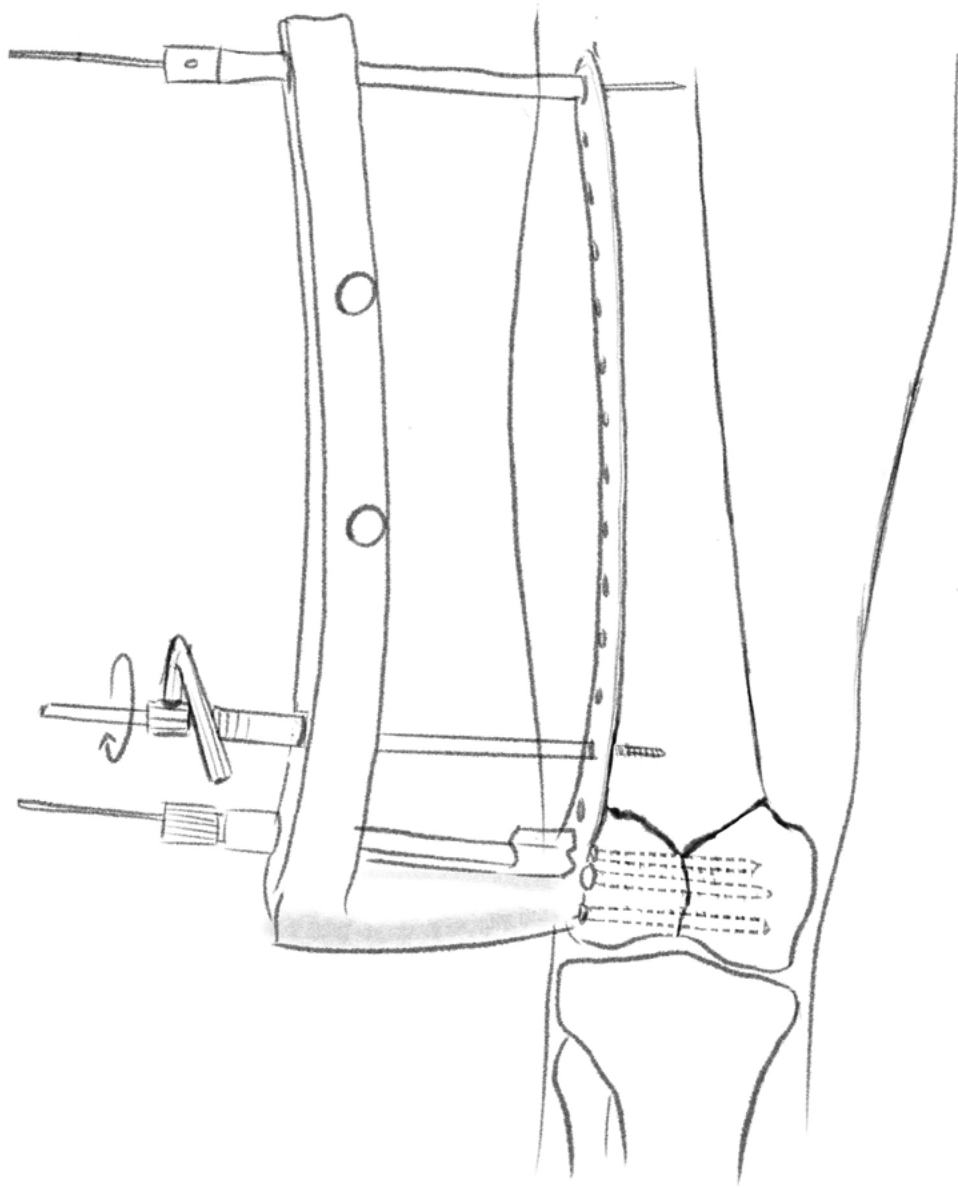


Figure 4.4  
In the usual manner, insert a pull reduction instrument monocortically and tighten the nut while monitoring position under C-arm to achieve optimal plate-bone distance.

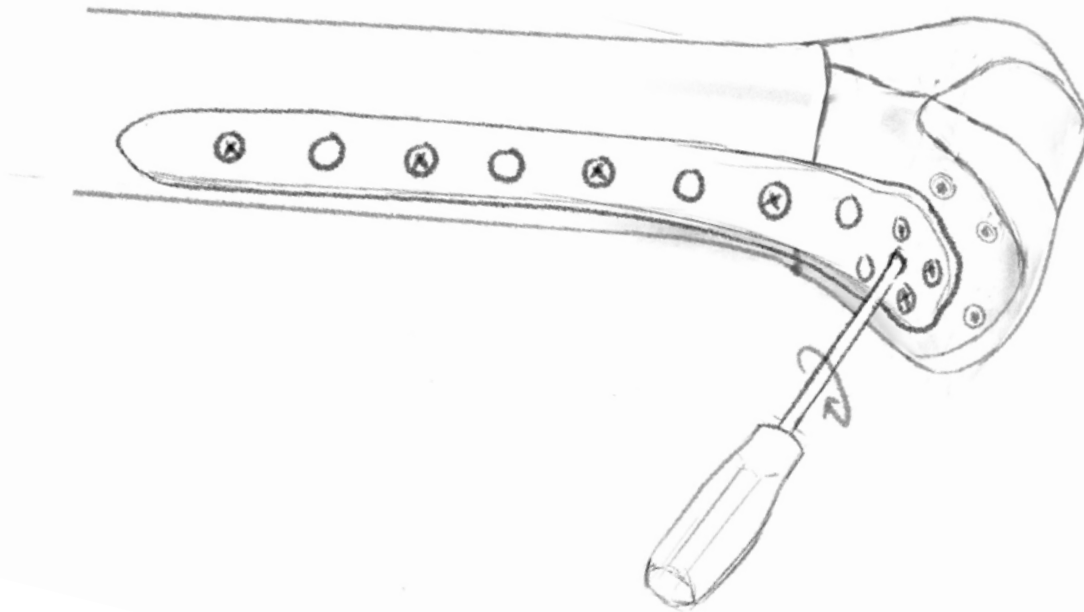


Figure 4.5

The first screw is placed in hole E using a 4.3 mm calibrated drill bit and a 5.0 mm titanium monocortical locking screw. The length of the screw needed is measured using 2.0 mm k-wire direct measuring device. Typically, 26 mm length screws are used for the shaft. Continue insertion of screws in the same manner. Remove the pull reduction instrument and replace with a screw. Insert a minimum of 4 screws proximally. The screw for hold A is inserted last. Assess the stability and confirm the final position of the plate.

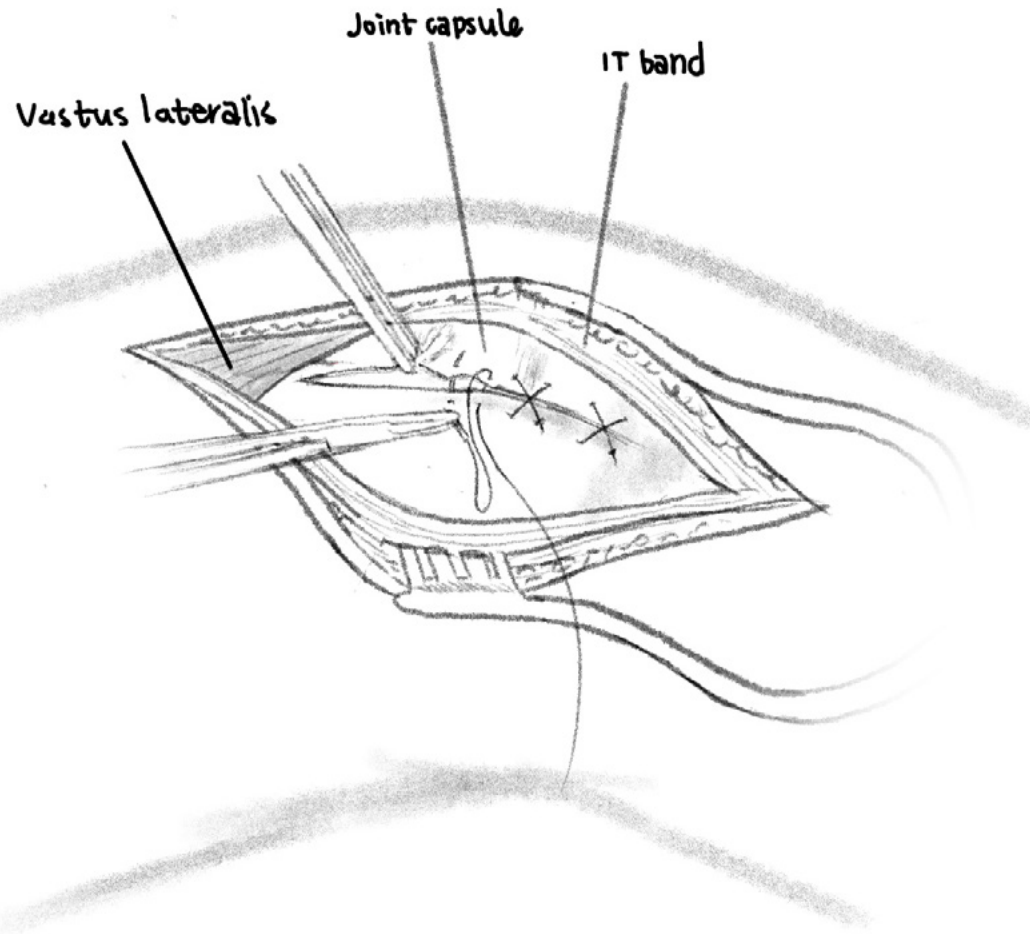


Figure 5. Closure

Irrigate the wound. Close the joint capsule and IT band with figure of eight 0 vicryl sutures. For superficial closure, use 2-0 vicryl for the subcutaneous tissue and 3-0 vicryl sutures or staples for skin closure and the percutaneous stab incisions. Place soft incision dressing over the distal femur.