

Type I



Type II



Type III





Type VI

Fixation with a locking plate



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Medial approach

Patient in prone

Medial plateau: incision as shown

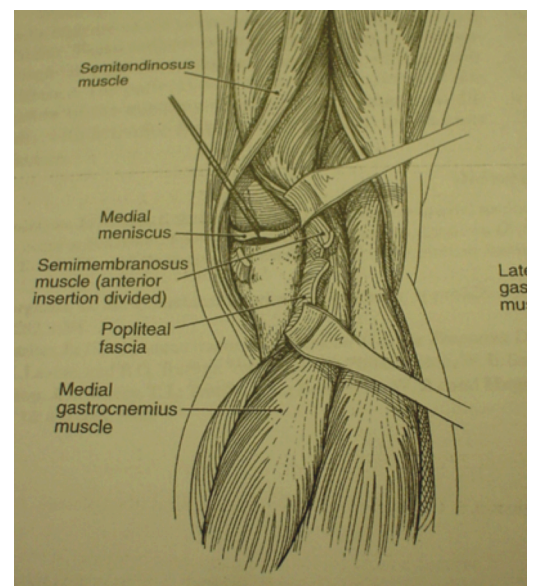
[posteromedial]

Dissection between Semitendinosus and
Medial gastrocnemius

Identified Semimembranosus insertion
and its anterior insertion is transected

Underlying popliteus and its fascia
identified and elevated carefully subperiosteal

Fixation with screw or plate



Posterolateral approach

Lateral plateau

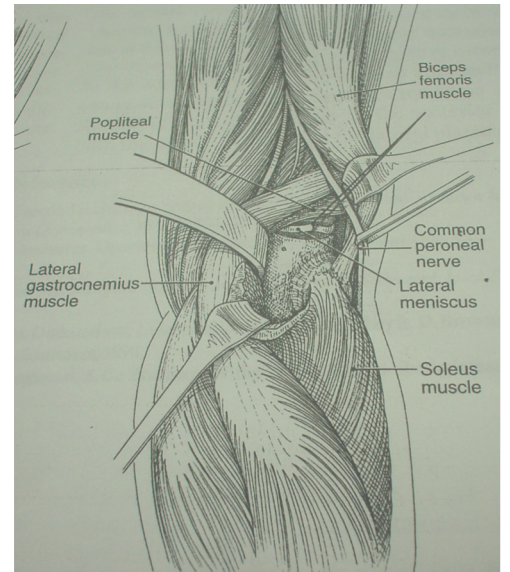
Incision over the biceps

Common peroneal nerve identified|

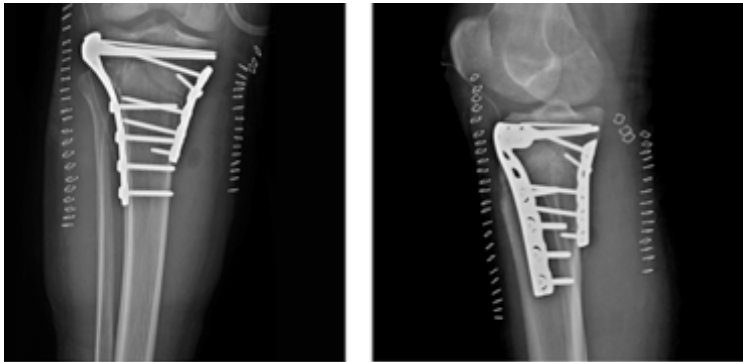
The lateral head of the gastrocnemius
retracted medially

Soleus is elevated from the proximal
tibio-fibular joint distally and medially

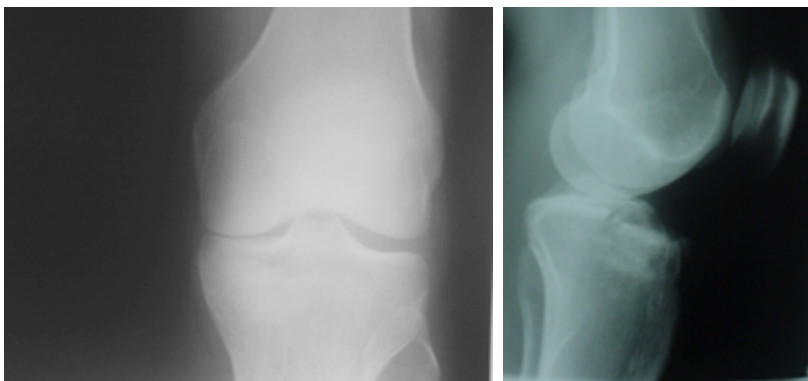
Fix the plate or screw

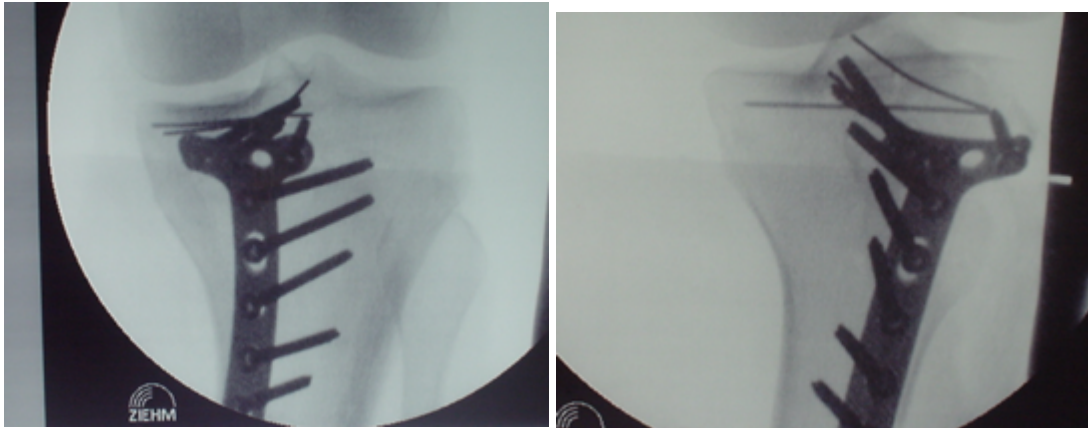


Fixation with double plates

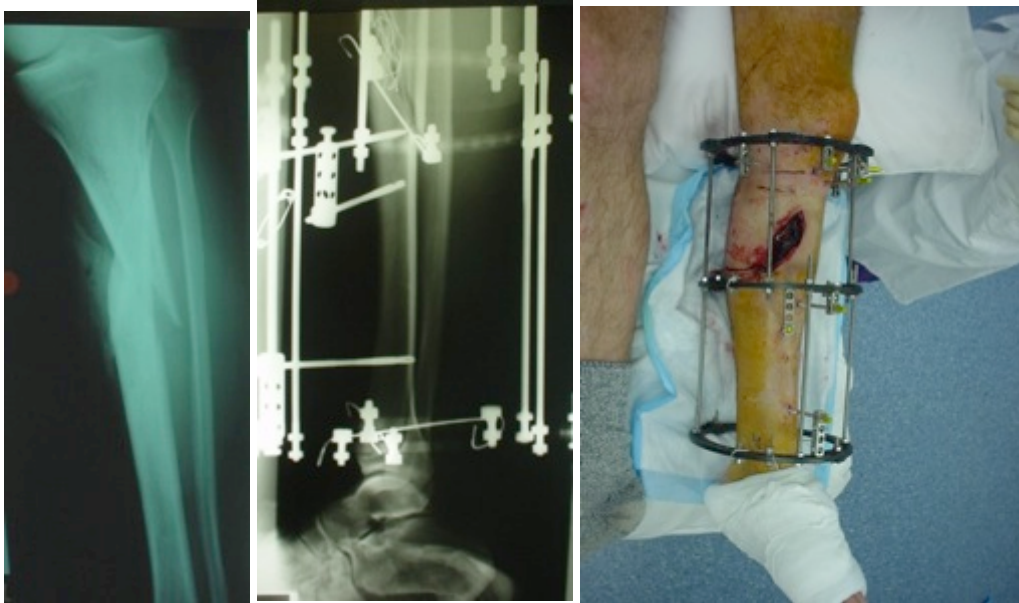


Type V Medial condyle





Type VI



Open Fractures

Antibiotics

Emergent irrigation and debridement

Incisions: should anticipate future incisions likely to be used for definitive fixation.
fixator.

More commonly—and in all cases of severely contaminated wounds—a joint-spanning external fixator can be applied with delayed reconstruction after subsequent débridements.

Post op;

Early mobilization and range-of-motion

A hinged rehabilitation brace is often preferred.

Weight bearing >12 weeks

The use of passive motion machines is controversial.

Results

Outcome

Long-term studies of tibial plateau fractures have recognized that knee cartilage can tolerate mild to moderate residual articular displacement with a low rate of severe arthrosis.

In a long-term analysis of 260 tibial condyle fractures, Lansinger found **outcomes related better to knee stability** than to the quality of articular reduction. Despite an average of >3 mm of residual tibial joint line displacement, Weigel demonstrated a low rate of posttraumatic arthrosis at long-term follow-up.

However, emphasis should be placed on optimizing the overall joint congruity and restoring the sagittal and coronal plane alignment.

More recently, Stannard reported on 39 high-energy fractures (37 patients) treated with a percutaneous locking plate and a minimally invasive approach. At early follow-up, no patient required additional surgical intervention, and only two patients demonstrated any malalignment.

Complications

1. Large open surgical approaches for internal fixation add to this risk, with historic rates of infection reaching 80%.

2. Nonunion in tibial plateau fractures is uncommon, but when this occurs, it is typically within the metaphysis of high-energy tibial plateau fractures and can be minimized by limiting distraction of this fracture site or by the use of bone graft.

3. Posttraumatic arthritis in long-term follow-up is increased in patients with advanced age, those who have undergone meniscal resection, and those with residual tilt of the tibial plateau. Surprisingly, little association between residual articular step-off and progressive degenerative changes has been found.
4. Loss of fixation is rare for fractures in which stable fixation is initially achieved. Failure is often related to bone quality, and the rate may be higher in elderly patients with high-energy fractures.
5. Acute compartment syndrome is rare

References

1. J Am Acad Orthop Surg, Vol 14, No 1, January 2006, 20-31.
2. Lansinger: Tibial condylar fractures: A twenty-year follow-up. *J Bone Joint Surg Am* 1986;68:13-19.
3. Weigel: Tibial plateau: Knee function after longer follow-up. *J Bone Joint Surg Am* 2002;84:1541-1551.
4. Bicondylar fracture of the Posterior aspect of the tibial plateau. Carlson. *JBJS* 80A: 1049
5. Schatzker: a The tibial plateau fracture. *Clin Orthop* 1979;138:94-104.
6. Weigel: Knee function after longer follow-up. *J Bone Joint Surg Am* 2002;84:1541-1551.
7. Stannard: The less invasive stabilization system in the treatment of complex fractures of the tibial plateau. *J Orthop Trauma* 2004;18:552-558.

