Type I

Type II

Type III
Type VI
Fixation with a locking plate

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**

![Fixation with double plates]

**Type V Medial condyle**

![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
