

# 3 Femoral fractures

## 3.13 III Distal femoral fractures - Temporary skeletal traction

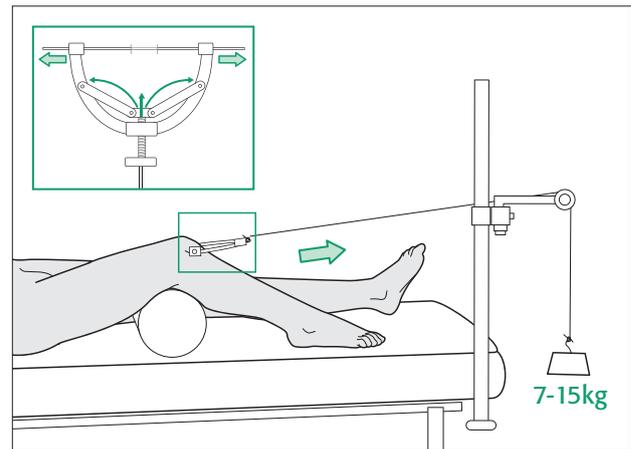
Indication **33-A1.2/3, 33-A2, 33-A3 and 33-C type fractures**

### 1 Principles

In cases where it is not possible to proceed to early definitive osteosynthesis (polytrauma, soft-tissue problems, patient condition, limited resources), a spanning external fixator is often used. A long leg splint can also be applied.

Temporary, proximal tibial, skeletal traction is reserved for those cases in which it is not possible to place a spanning external fixator, or use a long leg splint.

Care should be taken to protect pressure points on the skin.



### 2 Surface anatomy

Tibial tuberosity/patella/common peroneal nerve  
Bend the knee to make identification of the surface anatomy easier.

First, locate the prominence of the tibial tuberosity and circle it with a skin marker.

Next, identify the patella, followed by the infrapatellar tendon.

Rotate the leg internally and palpate the fibular head. The location of the peroneal nerve is just posterior to the fibular head. This area should be avoided during pin insertion.



### 3 Pin insertion

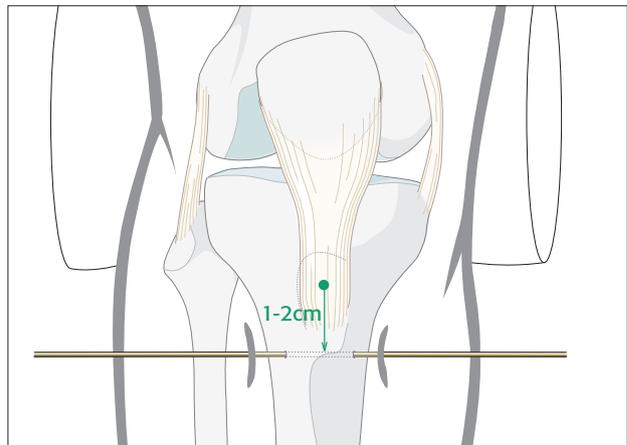
#### 3.1 Stab incision

Use a local anesthetic injected subcutaneously down to the tibial periosteum. Make a stab incision approximately 2.5 cm posterior to the tibial tuberosity avoiding the peroneal nerve.



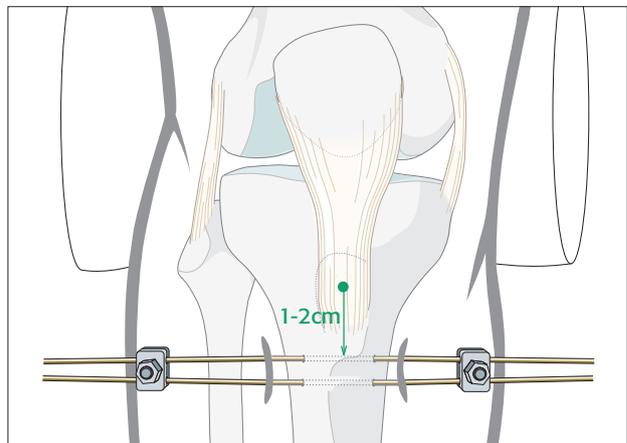
#### 3.2 Wire insertion

Insert a large K-wire, or a strong Steinmann pin, 1-2 cm distal to the level of the tibial tubercle. Ensure that the pin is inserted 1 cm posterior to the anterior cortex of the tibia to ensure that it does not cut out of the tibia.



In elderly patients with osteoporotic bone if long term temporary fixation is required the pin may need to be incorporated into a below knee plaster.

Alternatively, two parallel pins, about 1 cm apart, pre-loaded, and linked medially and laterally with Hoffmann-type external fixator clamps, will reduce the risk of cutting out.

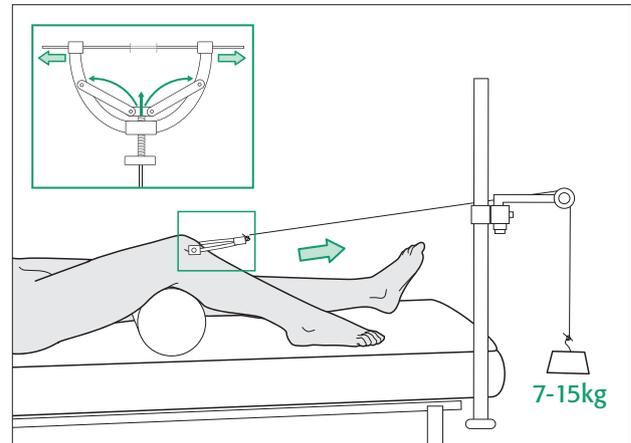




#### 4 Application of skeletal traction

After the wire has been inserted, connect it to an appropriate stirrup with 7-15 kg skeletal traction. Place a padded bolster in the supracondylar region to allow for knee flexion.

There may need to be some counter traction and the foot of the bed may need to be elevated.



#### 5 Aftercare following skeletal traction application

Skeletal traction is usually a temporary device for stabilization of the polytraumatized patient, if a spanning external fixator is for some reason not possible. In general, it would be left on for several days, up to 2 weeks. After this time, definitive surgical stabilization of the distal femoral fracture would be performed.

The traction pin sites require regular dressing. If pin

site infection occurs this will need to be treated with appropriate antibiotics and topical antiseptic application.

Inherent in this temporary stabilization are the problems of immobility, pain control, bed sores and heel ulcers. These issues must be carefully addressed during the period of skeletal traction.

##### *Thrombo-embolic prophylaxis*

Consideration should be given to thrombo-embolic prophylaxis, according to local treatment guidelines.