MDPO DPP in Tibia-Fibula Fractures
Mid-shaft Tibial-fibular Fracture
Components Required

4 Compatible Circular Rings for Midshaft Tibial Fractures
Components Required

Proximal Fixation Block

Distal Fixation Block
Frame Construct:
External Components

1. Threaded Rods
2. Columns
3. Fixation Bolt
4. Nut
5. Posts, Washers, Threaded Sockets, Rancho Cubes, Bolts
Frame Construct: Internal Components

- Olive Wire
- Smooth Wire
- Bayonet Wires
Frame Construct: Fixation Devices

Wire Cutter, Tensioner, Wrenches, Pliers
Final Frame Construct

- Proximal Fixation Block
- Fracture Segment
- Distal Fixation Block
1. Building The Proximal Fixation Block
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Components:

1. Closed Circular Rings

2. Threaded Rods or Columns
1. Building The Proximal Fixation Block

- Marked assigned holes for threaded rods or columns.
- Each rod or columns is separated by 5 holes.
1. Building The Proximal Fixation Block

- Insert the threaded rods or columns in the indicated white circular hole.
- Each rod or column is separated by five holes for a stable construct.

Rods

Columns
2. Building The Distal Fixation Block

- Insert the threaded rods or columns in the indicated white circular hole.
- Each rod or column is separated by five holes for a stable construct.
3. Connecting The Two Fixation Blocks

3. Connect the previously constructed distal fixation block (step 1) to the proximal fixation block (step 2)
3. Connecting The Two Fixation Blocks

- Attach the two fixation blocks with four threaded rods and corresponding nuts.
4. Fitting the Frame to the Extremity

- Utilize fluoroscopy to ensure proper placement of the frame with the fracture placed between the proximal and distal blocks.

- Allow 2-3 finger widths of space between the extremity and the posterior aspect of the tibia for post-operative edema expansion.
5. Proximal Stabilization Wire

- The first wire is a frontal plane wire placed lateral to medial on the tibia after distracting distally and correcting rotational and frontal plane deformity as much as possible.

When throwing the proximal wire in the proximity of the fibular head care must be taken to avoid the common peroneal nerve.
Distal Reference Wire

- Distal wire is placed first in order to give a reference point with the ankle joint.
- The wire should be placed from lateral to medial parallel to the ankle joint, this is done under fluoroscopy.
- The wire is secured on one side and then tensioned properly.
- The distal wire can now be used for traction and reduction of the fracture.
Distraction-Reduction Technique

- After rotational deformity is addressed and corrected, the distal wire is inserted and tensioned.
- The foot plate is then distracted and manual manipulation of the fracture is used to assist in reduction.
The Leg is suspended by reference wires

- Rectus alignment of the limb within the fracture
- The fracture falls within the working segment of the frame.
Reduction Wires

-An olive wire is placed on the proximal fragment depending on the orientation of the fracture to facilitate reduction.
Distal Reduction Wire

- A second olive reduction wire is placed parallel to the first reduction wire from the opposite side.
- The wire is placed 2 cm from the distal extent of the fracture.
- The two wires will work together to reduce the fracture.
- Attach but do not secure the wires to the frame.
With one tensioner the proximal olive is used to reduce the proximal fragment anatomically and then locked and tensioned.

The distal wire is tensioned from the opposite side of the olive allowing the fracture segment to be translated medially.

Photo above demonstrates the reduction with the Olive wire, once completed the olive side of the wire is secured and the wire is tensioned.
Finalized Reduction
Lower Shaft Tibial Fracture
Lower Shaft Tibia-Fibula Fracture Frame Construct

- Proximal block composed of two proximal closed circular rings (above fracture)

- Distal block composed of one closed circular ring (placed below fracture and above ankle joint) and DP plate