

156 Pelvic External Fixation

1 Indications

Emergency management of unstable pelvic fractures, alternatively a pelvic clamp or internal fixation during laparotomy (e.g., symphysis), depending on the type of fracture

2 Preoperative Preparation

Preoperative Investigations: Pelvic view, if possible computed tomography

Patient Preparation: Positioning should allow for the image intensifier; supine position; bladder catheter.

3 Specific Risks, Patient Information, and Consent

- Neurovascular injury
- Definitive treatment by internal fixation

4 Anesthesia

General anesthesia (intubation)

5 Positioning

Supine, image intensifier

6 Approach

Skin incision 2 cm distal and medial to the anterosuperior iliac spine

7 Operative Steps

- ① Positioning
- ② Marking the femoral vessels
- ③ Skin incision
- ④ Palpation of the anterosuperior iliac spine
- ⑤ Insertion of the drill sheath and determining the direction of drilling under image-intensifier control
- ⑥ Drilling to a depth of ~4 to 5 cm
- ⑦ Insertion of the Schanz screws via the outer drill sheath
- ⑧ Reduction
- ⑨ Definitive application of the fixator

8 Relevant Anatomy, Serious Risks, Tricks

- The direction of drilling is inclined ~20 degrees in a cranial direction and 30 degrees in a medial direction, with the patient supine.
- Do not insert the screws in the region of the anterosuperior iliac spine to avoid injury to the lateral femoral cutaneous nerve.

9 Measures for Specific Complications

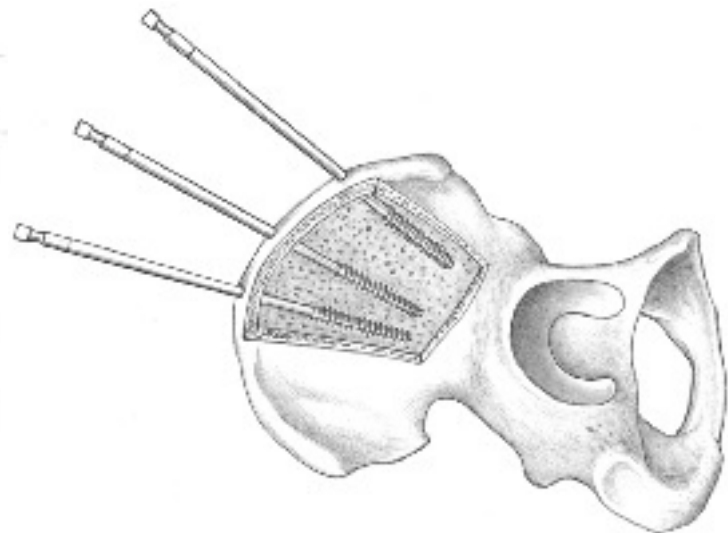
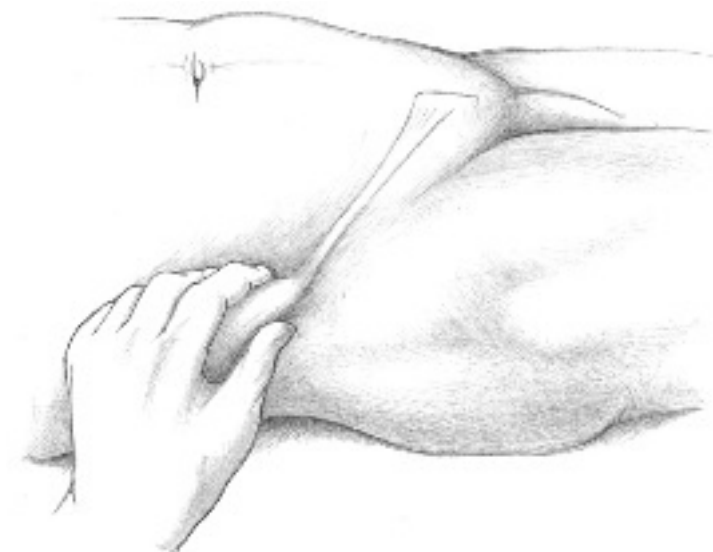
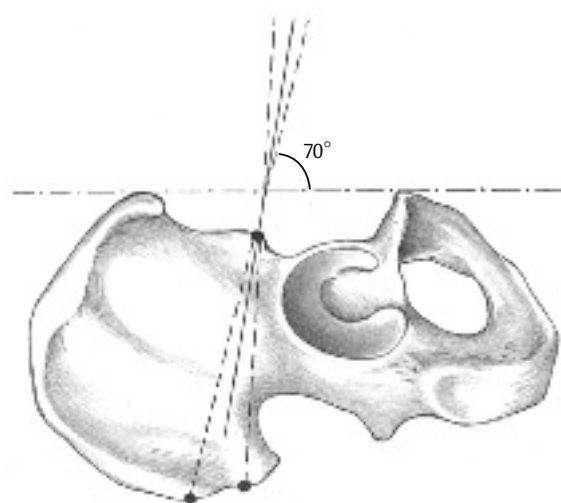
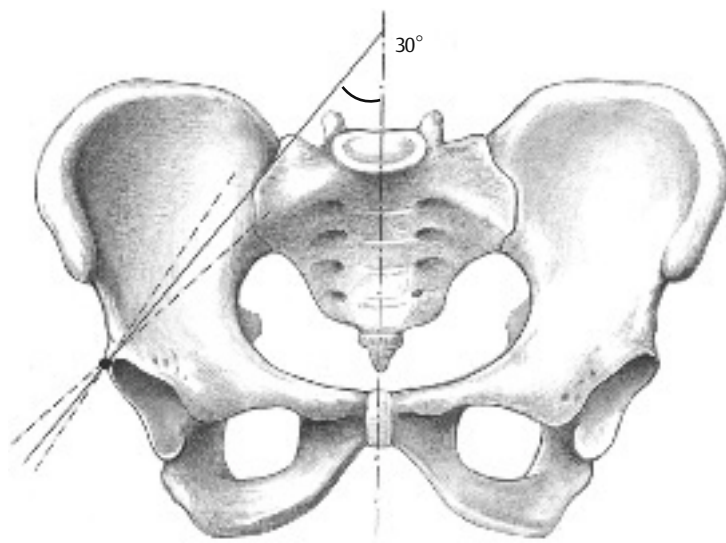
No particular measures required

10 Postoperative Care

Definitive treatment when the patient is stable, depending on the type of injury

Operative Technique

- 1 Placement of the Schanz screws
- 2 Application of the external fixator on the pelvic girdle



1 Placement of the Schanz screws

Orientation for the drill or the Schanz screws to achieve supra-acetabular fixation. With the patient lying supine, the direction of drilling is inclined ~20 degrees cranially and ~30 degrees medially. After inserting the

screws, the fracture is reduced by traction and rotation of the leg and using the Schanz screws as joysticks. Reduction is secured by the connecting rods.