

KEY PROCEDURES

TROCHANTERIC FLIP (GANZ) ANTERIOR HIP DISLOCATION FOR FIXATION OF PIPKIN FRACTURE-DISLOCATIONS

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Abstract

Background: Safe surgical dislocation with a trochanteric flip osteotomy has been shown to be a reliable technique that provides excellent exposure for treating femoral-head fractures with minimal complications. This technique also allows associated labral injuries and acetabular fractures to be treated through the same approach.

Description: The procedure is performed with use of a conventional Kocher-Langenbeck exposure with the patient in the lateral position. The trochanteric flip is performed, allowing exposure of the anterior capsule, which is incised to dislocate the head anteriorly. Fracture fixation is performed with use of mini-fragment screws followed by relocation of the head, closure of the capsulotomy, and fixation of the osteotomy.

Alternatives: Fixation of femoral-head fractures can also be performed with use of alternate surgical approaches. Anterior-based surgical approaches like the Hueter approach or the Smith-Petersen approach are preferred with the goal of preserving the posterior extraosseous blood supply to the femoral head. The posterior Kocher-Langenbeck approach can also be utilized because there is no clear evidence suggesting that a properly performed posterior approach affects the blood supply of the femoral head.

Rationale: Surgical hip dislocation is 1 of the preferred techniques for operative treatment of femoral-head fractures and is a versatile approach that provides circumferential exposure of the femoral head and acetabulum through an anterior dislocation. A compromised blood supply to the femoral head is much less likely with use of this approach compared with posterior-based surgical approaches. Compared with anterior-based surgical approaches, which are often restrictive, surgical dislocation is extensile and provides adequate exposure to treat associated injuries to the acetabulum and the labrum of the hip.

Expected Outcomes: Outcomes following surgical dislocation for femoral-head fractures are reportedly good to excellent in >80% patients. Urgent reduction of the hip joint followed by anatomical reduction of the fracture and stable fixation of the fracture and osteotomy leads to predictably good results.

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Notable complications include heterotopic ossification, which has been reported in up to 60% patients, as well as osteonecrosis of the femoral head (often related to the initial injury rather than the approach) and degenerative arthritis of the hip joint.

Important Tips:

- The Gibson interval may be utilized to preserve the gluteus maximus.
- Identify all of the posterior structures starting proximally from the posterior border of the gluteus medius, and continuing to the piriformis, triceps coxae, quadratus femoris, and the vastus lateralis.
- Aim for a thickness of 1 to 1.5 cm when performing the osteotomy; an osteotomy that is either too thick or too thin can negatively affect outcomes. The osteotomy should begin just anterior to the posterior fibers of the gluteus medius to ensure that the osteotomy is anterior to the piriformis tendon. It should exit distally to the vastus lateralis origin.
- Carefully elevate the posterior margin of the gluteus minimis from the capsule to avoid the tethering effect during anterior translation of the osteotomized fragment.
- Capsular tears during the initial dislocation are common and should be incorporated into the anterior capsulotomy.
- Repair of large posterosuperior labral tears may improve outcomes.
- Fixation of the fracture can be performed with mini-fragment screws or headless screws. Non-fixable small fragments can be excised.
- The osteotomy should be reduced and fixed in a stable manner to prevent trochanteric nonunion and preserve abductor function.

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