

Intraoperative dislocation of a trial femoral head into the pelvis during total hip arthroplasty

Yaron Bar Ziv, MD;* David Backstein, MD, MEd;† Oleg Safir, MD;† Yona Kosashvili, MD, MHA*†

So-called “mini-incision” approaches for total hip arthroplasty have become popular over the past few years.¹⁻³ However, the shorter incision leads to higher soft-tissue tension, increasing the chances for dislocation.

We describe the case of a woman who underwent total hip arthroplasty by a minimally invasive variation of a common arthroplasty procedure and suffered dislocation of the femoral component from the acetabulum into the pelvis.

Case report

A 76-year-old woman underwent a total hip arthroplasty for osteoarthritis under general anesthesia and positioned in a lateral decubitus position. A minimally invasive modification of the Watson-Jones approach as described by Bertin and Röttinger⁴ was used.

Following incision of the skin and fascia, the gluteus medius and minimus muscles were retracted posteriorly, and the anterior capsule was opened. The femoral head was removed after a double osteotomy of the femoral neck. The acetabulum was reamed to 48 mm, and a press-fit cup 50 mm in size (Pinnacle; DePuy Orthopaedics, Warsaw, Ind.) was introduced with a trial insert.

Once the acetabular trial was secured, the leg was lowered toward the floor inside a sterile bag to deliver the femur into the wound. The femoral canal was broached up to size 13 (Corail; DePuy), when stem stability was found appropriate. A trial reduction of the hip

joint was performed with a 28-mm standard head-and-neck trial component on the last broach. During dislocation of the trial femoral component from the acetabulum, the trial head disengaged and lodged under the tensor fascia lata muscle anteriorly. Direct attempts to retrieve the trial head caused it to further migrate in front of the acetabular anterior column and over the pelvic brim beneath the inguinal ligament along the inner table of the pelvis. In this position, the head could be manually palpated along the anterior column of the acetabulum but could not be retrieved. At this stage, fluoroscopy (Fig. 1) was performed to accurately assess the position of the head.

As direct retrieval attempts were unsuccessful, we used the lateral window of the ileoinguinal surgical approach to the acetabulum. The skin incision was elongated proximally by 3.5 cm up to the

iliac crest, proximally to the anterior superior iliac spine and away from the lateral cutaneous nerve of the thigh. A Cobb elevator was used to lift the iliacus muscle. The trial femoral head could then be reached and pulled out of the wound. The surgery was completed without further complication (Fig. 2).

Discussion

Several variations of mini-incision approaches to total hip arthroplasty exist that all share a shortened skin incision and purported diminished muscle damage. Intraoperative soft-tissue tension is

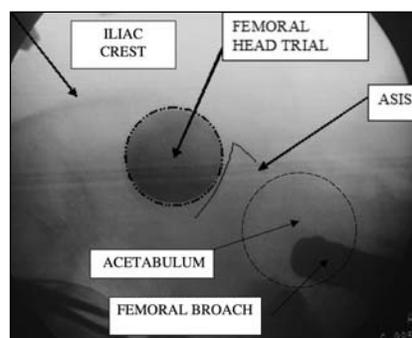


FIG. 1. Intraoperative fluoroscopy showing the dislocated position of the trial femoral head. ASIS = anterior superior iliac spine.

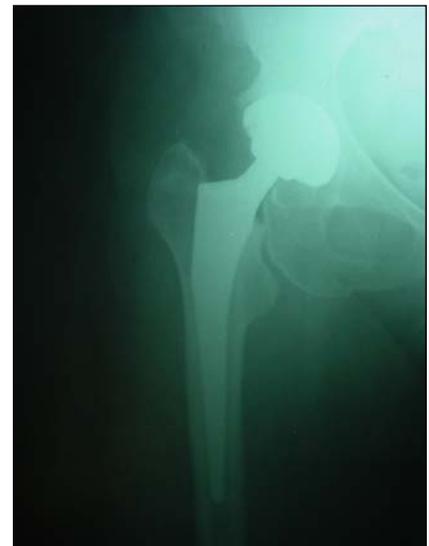


FIG. 2. Postoperative anteroposterior radiograph shows the femoral head in a good position.

From the *Orthopedic Department, Assaf Harofe Medical Center, Zerrifin, Israel, and the †Division of Orthopedics, Department of Surgery, Mount Sinai Hospital, Toronto, Ont.

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Correspondence to: Dr. Y. Kosashvili, 155 Marlee Ave., Toronto ON M6B 4B5; fax 416 586-8673; Yonasofi@gmail.com

higher as a result of the smaller incision, increasing the chances for the specific complication described in our patient, particularly when modular hip systems are used.

In a previously reported case,⁵ the femoral head trial was not retrieved for reasonable claims. The head is a sterile, round, smooth plastic component produced from acetyl copolymer resin. The patient's advanced age and medical status supported the decision to leave the trial femoral head in place. The patient had an overall satisfactory recovery and did not wish to have another operation. Batouk and associates⁵ indicated that some situations may warrant removal of a trial femoral head. Such situations include those in which the trial head causes compression of vital structures such as nerves, vessels or the ureter. In a younger patient, it may be desirable to remove the trial head because the long-term effects

of this foreign body are not known.

We contend that mini-incision approaches may increase the chances for femoral head dislocation, owing to the augmented soft-tissue tension and lessened visualization. Thus it may be beneficial for surgeons to be familiar with the ileoinguinal approach. This surgical approach allows exposure of the inner surface of the pelvis from the sacroiliac joint up to the pubic symphysis. The dissection involves isolating and mobilizing the femoral vessels and nerve, as well as the spermatic cord in men and the round ligament in women. The lateral, middle and medial windows of the approach are in respect to these anatomic structures.

The additional time required to revert to the iliac part of this exposure is minimal; there is no need for repositioning the patient, and the surgical risks are acceptable.

Competing interests: None declared.

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