Case Report

Retroperitoneal Hematoma

An Unusual Cause of Pain After Total Hip Arthroplasty

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Abstract: Pain following total hip arthroplasty due to impingement of the iliopsoas is a recognized complication of the procedure with a reported incidence as high as 4.3%. The pain is most often due to direct mechanical irritation of the iliopsoas due to a malpositioned or oversized acetabular cup. Definitive treatment of iliopsoas impingement often requires surgical revision or iliopsoas tenotomy, although many cases remain undiagnosed or are managed conservatively. We present an unusual case of pain after total hip arthroplasty due to a large retroperitoneal hematoma secondary to acetabular cup irritation of the iliopsoas tendon. This case represents a potentially important complication of undiagnosed or conservatively managed iliopsoas impingement, particularly in patients taking anticoagulants or antiplatelet medications.
Keywords: hip arthroplasty, iliopsoas, impingement, retroperitoneal hematoma.

Total hip arthroplasty (THA) is among the most common and successful procedures in orthopedic surgery, with greater than 238,000 primary and 30,000 revision cases performed annually in the United States as of 2005 [1]. Despite a high rate of success, pain (new or persistent) after THA is a complication, which is a major predictor of negative outcomes including the need for future revision [2]. Pain after THA may be due to a multitude of potential intrinsic or extrinsic causes [3], warranting a thorough diagnostic evaluation including a work-up for infection, aseptic loosening, fracture, and component failure. Evaluation of extrinsic causes related to the spine, peripheral nerves, vessels, herniae, and malignancy generally follows. An increasingly recognized cause of pain after THA is impingement of the iliopsaos muscle and tendon [4-8]. We present an unusual cause of pain after THA due to a large retroperitoneal hematoma secondary to acetabular cup irritation of the iliopsoas tendon. We believe this to be the only such published case of pain after THA due to retroperitoneal hematoma secondary to iliopsoas tendonopathy due to acetabular cup irritation.

Institutional review board approval was obtained for the use of all medical records and images pertaining to this case. The patient himself has agreed to have his case published in a scientific journal. All patient identifiers not pertinent to the case described have been removed to protect the patient's privacy.

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A 71-year-old man with a history of bilateral THA, both performed at another institution within the last

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Fig. 1. Anteroposterior radiograph of right primary total hip arthroplasty showing inferior and lateral placement of the acetabular cup.

4 years for osteoarthritis, presented to us with an excruciatingly painful right hip. The right THA was performed 3 1/2 years before and was relatively pain-free for the first 2 1/2 years postoperatively. The patient noted the onset of pain acutely following a golf outing in which he attempted to keep pace with some younger players. The next day he noted bruising over his medial thigh, as well as pain, and limited ability to walk. This initial pain eventually subsided but returned over the following 6 to 8 weeks and had persisted ever since.

The patient arrived to clinic on crutches, describing pain primarily in his groin with radiation down the medial thigh. The groin pain was reported as 9 of 10 or greater. The patient also reported 20 lb of weight loss in the few months before, with a reduced appetite and significant constipation, which he attributed to increased use of pain medications.

An infectious workup by the patient's primary care provider showed normal white blood count, erythrocyte sedimentation rate, and C-reactive protein. Initial x-rays and bone scan were negative for any signs of infection, aseptic loosening, or malignancy. An evaluation by a neurosurgeon revealed widespread degenerative disk disease with spinal stenosis. Epidural anesthetic injection provided relief of his pre-existing back pain but failed to reduce his groin pain. An arthrogram with anesthetic was reported as negative but provided mild temporary improvement in his pain.

The patient's medical history was positive only for well-controlled hypertension and osteoarthritis. He had no history of hernias or malignancies.

Physical examination revealed a pleasant man in moderate distress who had a painful, shuffling gait. His back was nontender but demonstrated a limited range of motion. He had mild right lower quadrant abdominal tenderness, without any masses noted. He demonstrated a flexion contracture of the right hip of 20° and the hip could be flexed further passively to 90°. His hip could be internally rotated only to neutral before the pain became unbearable. He had 20° of external rotation and 20° of abduction with pain. There were no palpable masses about his hip. The left hip flexed to 90°, internally rotated to 20°, externally rotated 30°, and abducted 30° pain-free. The rest of the examination was unremarkable.

Radiographs of the right hybrid hip replacement showed inferior and lateral placement of a noncemented acetabular cup (Fig. 1). Both the cup and stem appeared to be well fixed.

Repeat white blood count, erythrocyte sedimentation rate, and C-reactive protein were normal. The patient underwent an abdominal computed tomographic scan, which revealed a large retroperitoneal fluid collection tracking along the iliopsoas muscle (Fig. 2). Aspiration of the fluid by interventional radiology revealed a culture-negative hematoma. The patient reported considerable relief of symptoms following this procedure.

The patient was scheduled for a revision right THA to correct the position of the acetabular cup. A posterior approach was used, consistent with the primary operation. The joint fluid was sersanguinous. The 66-mm acetabular cup with three screws and 32 mm +0 oxinium femoral head were removed. The femoral component was found to be well positioned and stable. The iliopsoas tendon was inflamed. The tendon was followed up proximally, but no large fluid cavity was encountered. The

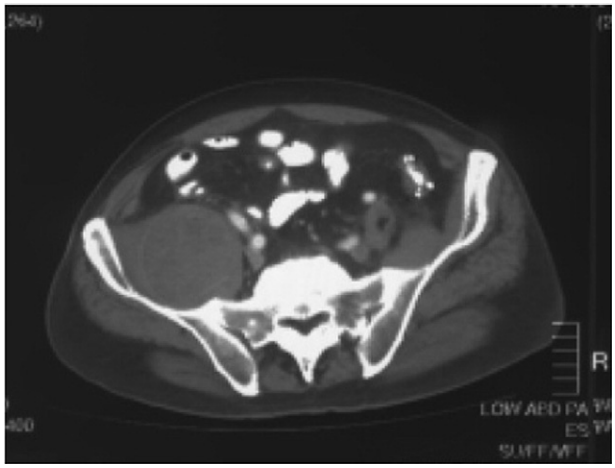

Fig. 2. Abdominal computed tomography showing a large right retroperitoneal mass.