

Technical Note

Surgical Release of Iliopsoas Tendon for Groin Pain After Total Hip Arthroplasty

Kevin Heaton, DO,* and Lawrence D. Dorr, MD†

After total hip arthroplasty (THA), some patients continue to have groin pain. Conditions that can cause groin pain include infection or tumor, aseptic loosening of the components, and soft tissue inflammation. Occasionally the soft tissue inflammation is tendinitis of the iliopsoas tendon. This condition commonly occurs because the anterior metal wall of the cup protrudes above the anterior bony acetabular wall [1], such as would occur with a lateralized cup, especially if capsulectomy has been done (Fig. 1). This also could occur if the cup is placed in a retroverted position, for which revision has been required [1]. This pain can be relieved by surgical release of the iliopsoas tendon.

Over 6 years, we have treated 5 patients who had persistent groin pain after THA without evidence of infection or loosening of the cup. Cup position was measured as satisfactory in each hip [2]. All of these patients complained of groin pain that occurred with activities that required use of the iliopsoas muscle, including straight-leg raising and active flexion of the hip, such as ascending stairs, lifting the operative leg into bed, and lifting the leg to get into and out of a car. Occasionally, there would be some pain radiation to the anterior thigh, which also was more pronounced with these activities. Level walking did not cause symptoms because the iliopsoas muscle is not active during walking on

level ground. The pain-specific activities of active flexion of the hip helped to differentiate iliopsoas tendinitis from septic or aseptic loosening, which causes pain with any weight bearing.

Little has been written about iliopsoas tendinitis. Mostly this condition has been described in sports medicine and radiology literature [3–5]. There is only 1 report of iliopsoas tendinitis after THA; it described 2 hips in which the acetabular component was placed in retroversion, which caused fraying and inflammation of the tendon as it passed over the edge of the shell and required revision surgery of the cup [1]. One of our patients had a prominent anterior edge of the cup as a cause (Fig. 2). The patient had a previous operation because of anterior dislocation of the hip and groin pain. That operation was done through an anterior incision that exposed the cup, and a new liner was placed with the hood anteriorly. The dislocations stopped, but the groin pain with flexion activities continued until the tendon was released by us. An increase of the hip offset or hip length of ≥ 1 cm also could cause this tendon irritation. One of the 5 patients operated by us had an increased offset of 1.8 cm, and 2 of 5 patients had increased hip lengths of 2.1 cm and 1 cm. When the groin pain is caused by iliopsoas tendinitis, it can be eradicated by surgical release of the tendon from the lesser trochanter. Pain relief occurred in all 5 of our patients.

*From the *Klamath Orthopedic and Sports Medicine Clinic, Klamath Falls, Oregon; and †The Arthritis Institute at Centinela Hospital Medical Center, Inglewood, California.*

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Reprint requests: Lawrence D. Dorr, MD, The Arthritis Institute at Centinela Hospital Medical Center, 501 East Hardy Street, 3rd Floor, Inglewood, CA 90301.

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Surgical Technique

The patient is placed in a supine position with the buttock of the operative leg elevated with a *bump* under the operative hip. Using a portion of the previous scar from the THA, a 4-cm incision is made beginning just distal to the tip of the greater trochanter and extending to the vastus tubercle along

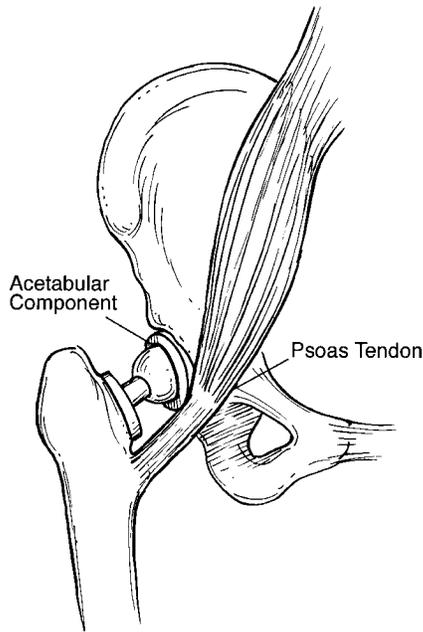


Fig. 1. Iliopsoas tendon rubbing on the anteroinferior edge of the acetabular component. The cup is sitting anterior to the bony acetabulum.

the posterior edge of the trochanter. The lesser trochanter is at the level of the vastus tubercle. By making the incision slightly proximal to the level of the lesser trochanter, it is easier to do the work of releasing the tendon. Dissection through the ilio-tibial fascia exposes the posterior femur. The leg is maximally internally rotated within the constraint of the hip capsule and soft tissues. This internal rotation places the lesser trochanter in a more posterior and palpable position. The Bovie cautery (Conmed Corp, Utica, NY) is used to release a portion of the quadratus femoris muscle off the femur until the lesser trochanter can be palpated easily. The lesser trochanter cannot be visualized fully, so this operation is performed by palpation of the structures to be released. The psoas tendon is palpated and, using the Bovie with a bent tip, is cut from the lesser trochanter (Fig. 3). It is imperative to maintain the leg in an internally rotated position to keep tension on the tendon and to continue to palpate the tendon to feel when it is released completely.

When the psoas tendon is released, a curved osteotome (0.5 inch) is used to release the anterior

Fig. 2. Anteroposterior pelvic radiograph of patient with lateralized cup as indicated by protrusion lateral to the edge of the cotyloid notch. The offset of the hip also is increased.



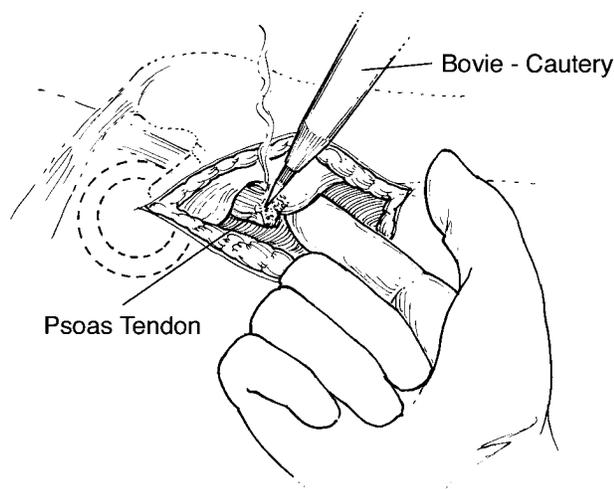


Fig. 3. Release the iliopsoas tendon from the lesser trochanter using a Bovie cautery device while palpating the tendon to verify a complete release.

and medial capsule from the femoral neck. This release is done subperiosteally, maintaining the osteotome on the bone at all times. The femoral neck is palpated to verify that the capsule has been released satisfactorily. Closure of the fascia, subcutaneous layer, and skin completes the operation.

Recovery

Patients stay in the hospital for administration of intravenous antibiotics for 24 hours. Weight bearing is not limited, and because the joint capsular protection is not changed, hip precautions for dislocation are not necessary. Patients generally are able to leave the hospital using a single crutch or a cane, which can be discontinued as leg comfort permits. Recommended rehabilitation is walking, and physical therapy is usually not necessary. Patients are cautioned that they may experience some weakness with stair climbing and entering a car.

Discussion

The follow-up period for these 5 patients ranges from 7 to 36 month, and each patient is satisfied with the results. None of the patients have any

limitations even with flexed hip activities. Each had significant relief of the preoperative groin pain within 6 to 8 weeks after the operation.

Balancing of the soft tissues around the hip during THA has been described previously [6,7]. Proper soft tissue tension remains as important as correct positioning of the components. Even with proper placement of the acetabulum and appropriate soft tissue balancing, patients occasionally may develop iliopsoas tendinitis. Conservative treatments should be attempted initially, including anti-inflammatory medication, physical therapy, and injections with corticosteroids and local anesthetics. If nonoperative treatment is not successful, patients benefit from surgical release. This operation is simple and can be performed through a small segment of the previous surgical incision. In our experience, these patients obtain substantial pain relief with no perceived impairment of strength or function. The treatment of iliopsoas tendon release is a much simpler operation for the surgeon and the patient than revision of the cup and should be tried initially. If the cup is determined to be in retroversion or is laterally placed on the radiograph, which means the anterior wall can be prominent above the bony wall, release of the iliopsoas tendon can be curative. If the patient is dislocating, the cup should be revised rather than the tendon released.

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