Technical Note

Arthroscopic Psoas Tenotomy

Michael Wettstein, M.D., Jochen Jung, M.D., and Michael Dienst, M.D.

Abstract: Tenotomy may be indicated for psoas tendinitis or painful snapping if conservative treatment remains unsuccessful. Because of significant complications with open techniques, endoscopic operations have been developed. We present a new arthroscopic technique to access and release the psoas tendon from the hip joint. This procedure can be performed in addition to other arthroscopic procedures of the hip joint or alone. To exclude additional hip disease, a diagnostic round of the joint should be completed. After hip arthroscopy of the central compartment has been performed, traction is released and the 30° arthroscope is placed via the proximal anterolateral portal lying on the anterior femoral neck. The medial synovial fold can be identified. This fold lies slightly medially underneath the anteromedial capsule at the level of the psoas tendon. The arthroscope is turned toward the anterior capsule. Sometimes, the tendon shines through a thin articular capsule, or it may even be accessed directly via a hole connecting the hip joint and the iliopectineal bursa at the level of the anterior head–neck junction. If this cannot be done, an electrothermic probe is introduced via the anterior portal to make a 2-cm transverse capsular incision. The tendon is released with the back side of the electrothermic device turned to the iliacus muscle that lies anterior to the psoas tendon. A complete release is achieved when the tendon stumps can be seen gapping at a distance and the fibers of the iliacus muscle are visible. The first 9 patients who underwent surgery performed according to this technique developed no complications, and their hip flexion strength was restored to normal within 3 months. **Key Words:** Hip—Psoas tendon—Tendinitis—Arthroscopy—Tenotomy.

In rare cases in which conservative treatment is unsuccessful, psoas tendinitis or painful psoas snapping may require psoas tenotomy.[1] Several surgical methods for release of the psoas tendon have been described, such as an anterior groin approach,[1-3] a modified iliofemoral incision,[4] a medial approach to the tendon insertion at the lesser trochanter,[5] and an ilioinguinal approach.[6] The medial approach to the hip described by Ludloff[7] also allows access to the psoas tendon, but to our knowledge, no series in which this incision was used has been published. An overall patient satisfaction rate of up to 89% after open psoas release or lengthening has been reported.[8] However, a complication rate of up to 40%, including recurrent painful snapping, subjective weakness of hip flexion, and anterior thigh paresthesia, has also been described.

Recently, Byrd[9,10] described an endoscopic technique for access and tenotomy of the psoas tendon at its trochanteric insertion. The extra-articular portals are placed via additional skin incisions distal to the hip joint. However, if tendinitis or painful snapping of the psoas tendon is evident on clinical examination, simultaneous intra-articular hip disease may be present. Through our operative experience with hip arthroscopy without traction,[11] open conservative hip surgery, and anatomic dissection, we were able to discern the close proximity and relation of the psoas tendon to the articular capsule of the hip joint. This led to the

From the Department of Orthopaedic Surgery, University Hospital (M.W., J.J., M.D.), Homburg/Saar, Germany.

Address correspondence and reprint requests to Michael Dienst, M.D., Department of Orthopaedic Surgery, University Hospital, D-66421 Homburg/Saar, Germany. E-mail: Michael_Dienst@yahoo.de

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development of a technique whereby the psoas tendon can be directly accessed from the hip joint periphery with the use of standard portals.

TECHNIQUE

After diagnostic and therapeutic arthroscopy of the central compartment, traction is released and the counterpost removed. The unsterile foot is taken out of the traction boot and is covered with a sterile hood. Without traction, the proximal anterolateral and anterior portals to the peripheral compartment are placed with a hip flexion of approximately 30° to increase the space over the anterior head and neck area (Fig 1).[11,12] A diagnostic round of the hip joint periphery is performed, and possible intra-articular disease is addressed.

For release of the psoas tendon, the 30° arthroscope is placed via the proximal anterolateral portal lying on the anterior transition of the femoral head to the femoral neck. The medial synovial fold can be identified bridging the anteromedial margin of the femoral head with the articular capsule and attaching directly proximal to the lesser trochanter. This fold is a very constant structure and an important landmark, not only in joints in which visibility is decreased.[11] The fold lies slightly medially underneath the anteromedial capsule at the level of the psoas tendon. The arthroscope is turned toward the anterior capsule, proximal to the zona orbicularis and anterior to the proximal insertion of the medial synovial fold. Sometimes, the tendon shines through a thin articular capsule, or it may even be accessed directly via a hole connecting the hip joint and an iliopectineal bursa (Fig 2). If access is not possible to attain, an electrothermic probe is introduced via the anterior portal to make a 2-cm transverse capsular incision. Usually, the psoas tendon can be directly identified. In obese patients, it may be necessary to remove periarticular fat tissue surrounding the tendon.

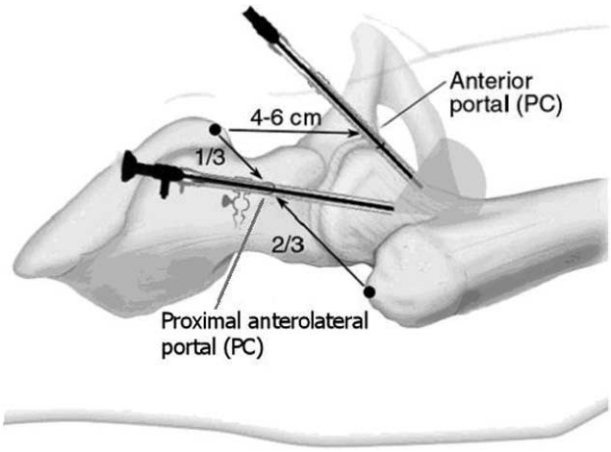

Figure 1. Portal placement to the peripheral compartment (PC). The arthroscope is introduced via the proximal anterolateral portal; the electrothermic device is placed via the anterior portal.

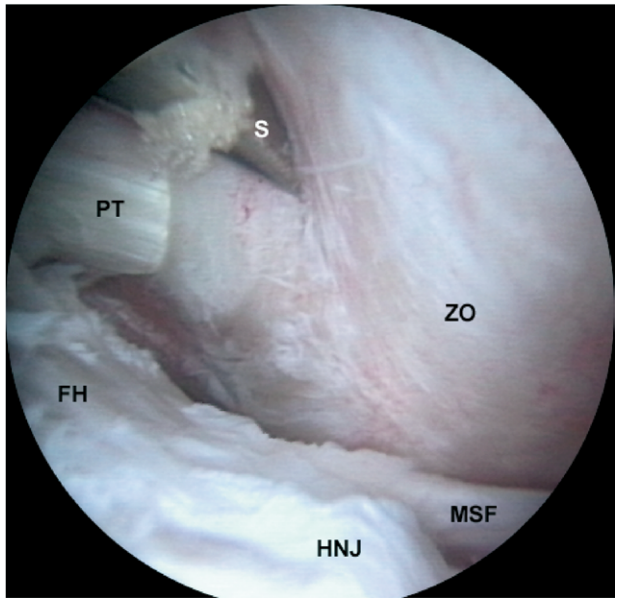

Figure 2. Arthroscopic view of the psoas tendon (PT) with a 30° arthroscope introduced via the proximal anterolateral portal. Anatomic variation with connection of the joint to the tendon sheath. ZO, zona orbicularis; MSF, medial synovial fold; HNJ, Head–neck junction; FH, femoral head; S, shaver introduced via anterior portal.

The tendon is released from lateral to medial, but it can also be released from medial to lateral (Fig 3). We prefer to cut the tendon with the back side of the electrothermic device turned to the iliacus muscle lying anterior to the psoas tendon. However, depending on the potential for arthroscopic access to this area and the design of cutting devices, the tendon can also be released, thereby safely aiming the device from lateral as the femoral neurovascular bundle lies anterior to the iliacus muscle (Fig 4). A complete release is achieved when the tendon stumps are gapping at a distance and the fibers of the iliacus muscle are visible (Fig 5).

DISCUSSION

The treatment of patients with psoas tendinitis and painful snapping of the psoas tendon is primarily conservative. Only few patients with persisting symptoms require a surgical intervention.[1,10]

Up-to-date open[1-6] and endoscopic extra-articular