A combined tear of the proximal iliotibial band and tensor fascia lata is an uncommon injury, and currently, the body of literature on the topic is limited. The suture anchor repair technique described in this article allows anatomic restoration of the proximal iliotibial band and tensor fascia lata.

Abnormalities of the proximal iliotibial band (ITB) include overuse injuries, traumatic tears, degenerative tears, and inflammatory conditions. Traumatic injuries are known to be very rare and generally occur during sports participation, running, mechanical falls, or high-energy trauma. Injury severity ranges from muscle/tendon straining, without structural damage, to complete tearing of the proximal ITB and tensor fascia lata (TFL) muscle.

Given the uncommon nature of these injuries, the diagnosis can be challenging. A thorough history and physical examination generally reveal a history of trauma, with examination findings consistent with weakness in the hip abductors. Magnetic resonance imaging (MRI) is important to define the location and extent of the injury (Fig. 1).

Treatment of traumatic proximal ITB and TFL injury depends on the severity of the patient’s dysfunction and pathology, as well as the chronicity of the pathology. Currently, there is no publication describing the repair of these injuries. In this article, we describe an anatomic suture anchor repair technique of a combined tear of the proximal ITB and TFL.

**Surgical Technique**

**Setup and Surgical Approach**

After general anesthesia and muscle relaxation, the patient is placed in the lateral decubitus position and secured with lateral positioning posts. The surgical site is prepared and draped in a normal sterile fashion with the operative extremity free to allow range of motion as needed. An anterior approach to the iliac crest is performed through a curvilinear incision that extends from the iliac tubercle to the anterior superior iliac spine (Fig. 2). The incision is carried through the subcutaneous tissue until the iliac crest is encountered (Fig. 3). The proximal ITB and TFL tears are identified and independently mobilized with blunt dissection in preparation for repair (Fig. 4). If needed, degenerative tissue can be debrided with a scalpel to a stable healthy margin before repair (Table 1).

**Footprint Preparation and Anchor Placement**

A high-speed 4-mm oval bur is used to lightly decorticate the footprint for the ITB and TFL insertions on the iliac crest. Next, a straight SutureTak® drill guide (Arthrex, Naples, FL) is placed at the anterior aspect of the footprint and drilled with a 2.5-mm drill bit. A double-loaded 3.0-mm PEEK SutureTak anchor (Arthrex) is then placed into the pilot hole using a mallet. Subsequent anchors are placed from anterior to posterior at 1-cm increments until the footprint is adequately covered to allow anatomic repair (Fig. 5, Video 1, Table 2).
ITB and TFL Repair

After anchor placement, 1 limb from each suture is then placed into the TFL using a locking Krackow suture. This is performed by placing the first limb of each suture through the underside of the TFL, exiting on the outer surface. The suture is then run distally using 4 locking throws along the outer surface of the TFL, followed by taking the suture back proximally with 4 additional locking throws. The second limb for each suture is then brought through the underside of the TFL in a simple fashion, exiting on the outer surface of the TFL. These same steps are repeated for each suture and are performed from anterior to posterior. Once all sutures have been placed, the suture limbs brought through the TFL in a simple fashion are tensioned, which reduces the TFL to the footprint via a tension-slide mechanism (Fig. 6). The sutures can then be sequentially tied from anterior to posterior to complete the repair of the TFL (Fig. 7). Next, the proximal ITB, which overlies the TFL, is directly repaired to the existing aponeurotic fascia along the iliac crest using...
0 Vicryl sutures (Ethicon, Somerville, NJ) in an interrupted figure-8 fashion (Fig. 8). The skin and subcutaneous tissues are closed in a standard interrupted fashion to complete the procedure (Fig. 9).

**Postoperative Rehabilitation**

After surgery, the patient is maintained on touch-down weightbearing with no active abduction or internal rotation and no passive adduction or external rotation for 6 weeks. At 4 weeks, the patient can begin to regain and improve muscular strength with isometric exercises of hip flexion and adduction, in addition to core and quadriceps strengthening. After 6 weeks, a gait training program is commenced with goal of full weightbearing by 8 weeks postoperatively. At 12 weeks, the patient can advance strengthening with standing hip abduction and flexion, side lying leg raises, nonimpact hip and core exercises, closed chain abductor strengthening, and balance/proprioceptive drills.

**Discussion**

The proximal hip and pelvis are known to have complex layered anatomy.\(^1,3-5\) The proximal ITB insertion extends from the anterior superior iliac spine (ASIS) to the iliac tubercle, \(\sim 5\) cm posterior to the ASIS.\(^1\) The TFL muscle inserts on the iliac crest deep to the proximal ITB insertion and extends over the same distance from anterior to posterior as the ITB, whereas the gluteus minimus is deep into the TFL and inserts over a large area on the ilium between the anterior and inferior gluteal lines.\(^1\) Understanding this complex layered anatomy is important to achieving successful anatomic repair of these injured structures. Currently, there is a limited body of literature regarding the pathology of the ITB and TFL. The majority of cases reported in the literature are secondary to overuse, a pathophysiological process known as proximal ITB syndrome.\(^4\) There are very few reported cases of traumatic injury to these structures,\(^1,2\) and to our knowledge, there are no published reports of surgical repair of this injury. Even so, the proximal ITB and TFL are important for normal hip strength and function and specifically activate during extension, abduction, and internal rotation of the hip.\(^5\) Additionally, weakness of the TFL has been shown to possibly increase the risk of ligamentous injury of the knee.\(^6\) It is therefore our opinion that surgical repair is generally useful in patients that have significant physical limitations after sustaining a traumatic injury.

Although this technique allows anatomic repair of the proximal ITB and TFL, there are some risks and limitations. There is a possible risk of injuries to the lateral femoral cutaneous nerve and its terminal branches during the exposure; however, the nerve is generally deep to the fascia overlying the sartorius and medial to the TFL muscle, making injury unlikely.\(^7\) If the injury pattern extends distally to the ASIS and iliac crest, we recommend judicious exposure and protection of the nerve throughout the procedure. The use of suture anchors significantly increases the cost of the procedure and may risk penetration of the medial or lateral cortex of the iliac crest during drilling and insertion. Even so,

### Table 1. Pearls and pitfalls

| Pearls                                      |
|---------------------------------------------|
| 1) Adequate exposure is important for complete visualization of the tear. |
| 2) Care should be taken to remove degenerative-appearing tissue from the edges of the tendon before repair. |
| 3) A high-speed bur should be used to lightly decorticate and optimize the footprint for tendon healing. |
| 4) Place a sufficient number of anchors to allow complete coverage of the footprint. |

| Pitfalls                                    |
|---------------------------------------------|
| 1) Care should be taken to maintain the drill trajectory in line with the orientation of the iliac crest to prevent inadvertent penetration of the medial or lateral cortex. |
| 2) Protect the lateral femoral cutaneous nerve during the surgical approach. |
| 3) Understand the layered anatomy of the abductor/fascia lata complex. |

### Table 2. Advantages and disadvantages

| Advantages                        |
|-----------------------------------|
| 1) Allows anatomic repair of the tensor fascia lata (TFL) and proximal iliotibial band (ITB) |
| 2) Allows direct visualization of the injured structures |

| Disadvantages                     |
|-----------------------------------|
| 1) Requires drilling into the iliac crest for suture anchor placement |
| 2) Requires the use of suture anchors, which increase the cost of the procedure |
| 3) Risks injury to the lateral femoral cutaneous nerve and its terminal branches |

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**Fig 5.** Patient is in the lateral decubitus position. Suture anchors (asterisks) are placed into the iliac crest at the anatomic origin of the proximal iliotibial band tensor fascia lata. Anchors are placed from the anterior to posterior at 1-cm increments until the footprint is adequately covered.
Fig 6. Patient is in the lateral decubitus position. Sutures from the previously placed anchors are introduced into the tensor fascia lata (TFL) by taking the first limb of each suture through the underside of the TFL, exiting on the outer surface. The suture is then run distally using 4 locking throws along the outer surface of the TFL, followed by taking the suture back proximally with 4 additional locking throws. The second limb for each suture is then brought through the undersurface of the TFL in a simple fashion, exiting on the outer surface of the TFL. These same steps are repeated for each suture and are performed from anterior to posterior. Once all sutures have been placed, the suture limbs brought through the TFL in a simple fashion are tensioned, which reduces the TFL to the footprint via a tension-slide mechanism.

Fig 7. Patient is in the lateral decubitus position. Tension (arrow) can be applied to determine if the footprint coverage (asterisk) is adequate.

Fig 8. Patient is in the lateral decubitus position. The proximal iliotibial band, which overlies the tensor fascia lata, is then directly repaired to the existing aponeurotic fascia along the iliac crest with 0 Vicryl sutures in an interrupted figure-8 fashion.
the use of anchors is a common and reliable technique for tendon fixation and allows reproducible, stable, and anatomic repair.

**Conclusions**

The current technique is a safe and technically manageable procedure that fully restores the anatomic footprint of the proximal iliotibial band and tensor fascia lata. Further, clinical studies comparing conservative and surgical treatments are needed to determine the best options for patients with injury to the proximal ITB and TFL.

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**Fig 9.** Coronal T1 magnetic resonance image 2.5 years after surgery, demonstrating healed proximal proximal iliotibial band (ITB) and tensor fascia lata (TFL) repairs (black arrow).