

Arthroscopic Hip Labral Repair With Knotless FiberTak Suture Anchor



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Abstract: We describe a modification to a standard labral repair technique that uses a knotless suture anchor. This technique modification allows for improved suture management and maneuverability during suture passing and tensioning. This technique can be reproduced and has the potential to be implemented in other procedures.

Hip arthroscopy has become an increasingly popular modality for treating intra-articular conditions of the hip in the younger population.¹ With advancements in technology, a drastic expansion of indications for hip arthroscopy has evolved over the past 2 decades. Labral tears are one of the most common pathologies treated with hip arthroscopy, most frequently as sequelae of femoroacetabular impingement, overuse, and trauma.¹

A wide variety of techniques have been described to repair hip labral tears, including different implants such as knotless or knotted anchors, or the order of suture passage in order to achieve labral inversion or eversion. The development of knotless suture anchors over the past decade has helped improve the efficiency and ease of numerous arthroscopic procedures; however, they can still be prone to technical errors or manufacturing defects such as inadvertent locking, looping, failure to deploy, or anchor pullout.² The purpose of this Technical Note is to describe a simple modification to suture management when passing sutures in an inverted fashion during hip arthroscopy using the 1.8-mm Knotless FiberTak (Arthrex, Naples, FL).

Surgical Technique

The patient is positioned supine on the traction table using either a perineal post or foam countertraction pad per surgeon's discretion. Diagnostic arthroscopy using the anterolateral and midanterior (MA) portals is performed in standard fashion, as well as other critical parts of the procedure before labral repair. In preparation for labral repair, a distal anterolateral portal (DALA) is created and the acetabular bed is debrided.

Setup for labral repair is as follows: the anterolateral portal is used as a viewing portal, the MA portal as the passing portal, and the DALA portal for instrumentation. The 1.8-mm Knotless FiberTak (Arthrex) guide is placed securely through the MA portal onto the acetabular rim medial to the labrum. The 1.8-mm drill is used to drill a pilot hole into the acetabulum and

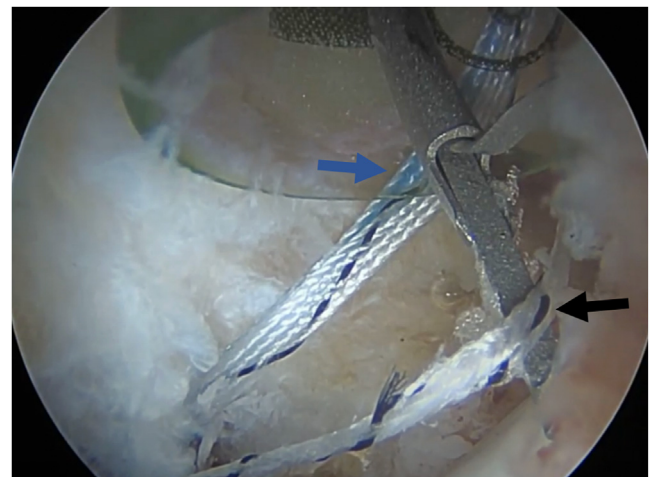


Fig 1. Arthroscopic view from the anterolateral portal of a right hip. The looped passing stitch (black suture) is grasped 2 to 3 cm above the anchor point (black arrow, passing stitch; blue arrow, repair stitch).

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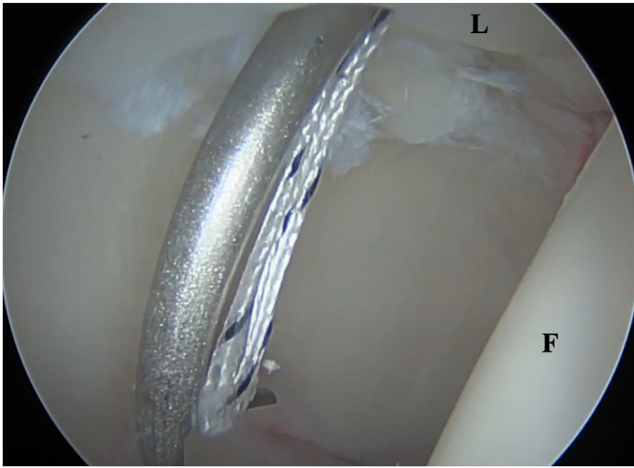


Fig 2. Arthroscopic view from the anterolateral portal of a right hip. The looped passing stitch is passed full thickness underneath the torn labral tissue into the joint space. (F, femoral head; L, labrum.)

the drill is carefully removed without moving the drill guide. The anchor is then gently pushed into the drill hole until it is provisionally sunk and then gently malleted into place. The drill guide and inserter are then removed and the 3 suture tails (blue repair stitch, and 2 ends of the black passing stitch) are given a slow, steady pull to properly set the knotless anchor mechanism.

Passage of sutures is then conducted in inverted fashion. Using the 70° SlingShot (Stryker Co., Kalamazoo, MI) through the DALA portal, the looped end of the black passing stitch is grasped and loaded approximately 2 to 3 cm above the anchor point (Fig 1) and passed full thickness underneath the torn labral tissue into the joint space (Fig 2). It is critical to grasp the



Fig 3. Arthroscopic view from the anterolateral portal of a right hip. Retrieval of the passing stitch (black suture, L, labrum).

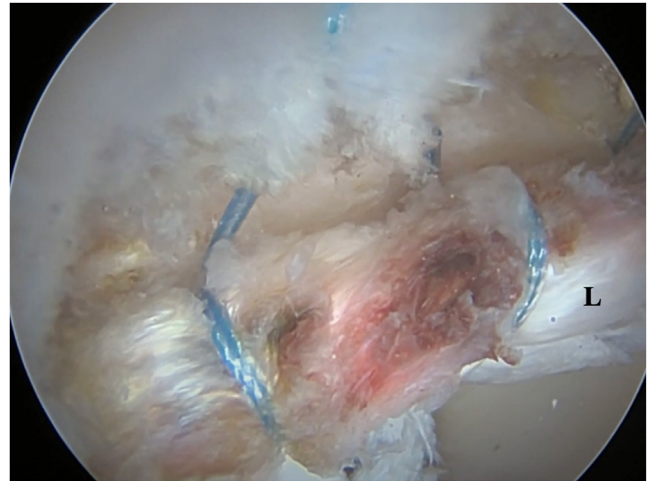


Fig 4. Arthroscopic view from the anterolateral portal of a right hip. Tensioning of the labrum after passage of the repair stitch (L, labrum).

passing stitch with enough slack from the anchor to ensure (1) ease of passage and maneuverability through the tear and (2) ease of retrieval from the joint space. This step prevents accidental looping of the passing stitch with the repair stitch if the surgeon were to load the stitch externally. The FiberTape Retriever (Arthrex) is then used to retrieve both the passage and repair stitches through the MA portal (Fig 3). The repair stitch is then passed through the looped end of the passage stitch and shuttled through the anchor in an inverted fashion and tensioned appropriately (Fig 4). Pearls and pitfalls as well as advantages and disadvantages of the technique are provided in Tables 1 and 2, respectively.

Discussion

This described technique is a simple modification to the passage of sutures with the 1.8-mm Knotless FiberTak (Video 1, Fig 5). The primary advantage to this technique is to prevent accidental entanglement of the

Table 1. Pearls and Pitfalls

Pearls

- Pass sutures in an inverted fashion
- Portal setup is as follows: AL portal is the viewing portal, MA portal is the cannula/passing portal, and DALA is for suture anchor insertion and tensioning
- Ensure there is adequate slack by grasping the passing loop stitch away from the anchor to prevent accidental looping
- Use a tension-reliever retriever such as the Arthrex FiberTape retriever (Arthrex) to avoid injuring the labrum

Pitfalls

- Avoid overtensioning the labrum
- Grasping the suture too close to the anchor origin may prevent adequate retrieval of the suture end intra-articularly

AL, anterolateral; DALA, distal anterolateral; MA, midanterior.

Table 2. Advantages and Disadvantages

Advantages	Disadvantages
<ul style="list-style-type: none"> • Prevents accidental entanglement of repair and passing stitches • Allows for greater apposition of the labrum to the femoral head with less risk of disrupting the suction seal • May reduce operative time 	<ul style="list-style-type: none"> • Initial learning curve • Technically challenging

repair and passage stitches when passing in an inverted fashion, as loops may occur more superficially and cannot always be visualized with the arthroscope.^{3,4} The primary disadvantage to this technique is the initial learning curve of loading and passing the Sling-Shot device in one step intra-articularly. Performing this in one step is more technically demanding and may be a potential limitation of the technique when surgeons first try the technique. Another limitation includes the potential for over-tensioning the labrum. Over-tensioning the labrum may lead to eversion of the labral edge and disruption of the suction seal. Direct visualization of the tensioning step helps mitigate this risk. With the increase of knotless anchor technology,

this maneuver can be easily extrapolated to other procedures such as a labral repair in the shoulder.⁵

Disclosures

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: E.S. reports a relationship with Arcuro Medical Ltd. that includes consulting or advisory. All other authors (M.N., K.V., K.Y.) declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper

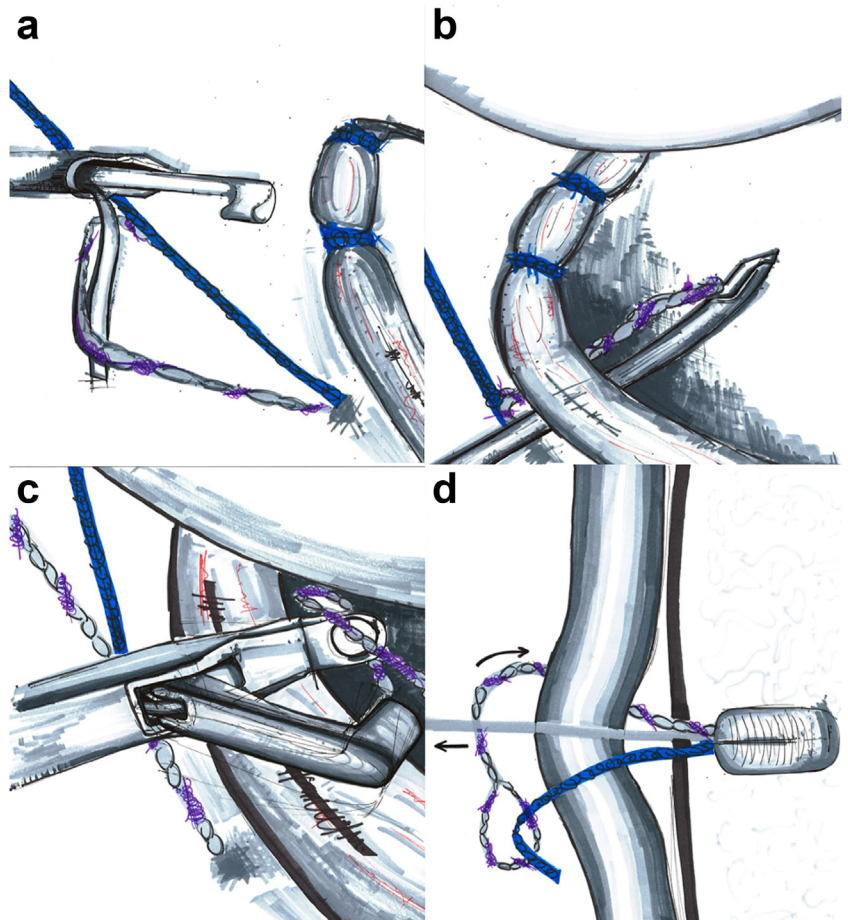


Fig 5. Knotless FiberTak suture anchor technique illustration. (a) Suture grasping. (b) Bringing the passing stitch through the labrum into the hip joint in an inverted fashion. (c) Retrieval of the passing stitch. (d) Shuttling the repair stitch through the passing stitch (black suture, passing stitch; blue suture, repair stitch).

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