

# Reverse Passage of the Suture Lasso in Arthroscopic Rotator Cuff Repair

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## ABSTRACT

Suture passage in arthroscopic rotator cuff repair can be technically difficult. The suture lasso is typically passed antegrade from the bursal side of the rotator cuff. Antegrade passage of the suture lasso can be particularly difficult when visualization is limited. Reverse passage of the suture lasso from the undersurface can be used to place sutures in technically challenging circumstances. The suture lasso is placed retrograde through the undersurface of the rotator cuff and used as a suture shuttle to bring sutures back through the rotator cuff. This technique is easily reproducible and cost-effective, and it requires only 2 working arthroscopy portals.

**A** rthroscopic rotator cuff repair techniques continue to evolve. Numerous suture-passing devices have been developed to aid in arthroscopic suture passage. The Suture Lasso (Arthrex, Naples, Fla) is commonly used to pass sutures antegrade from the bursal side of the rotator cuff from anterior, posterior, and modified Neviaser portals.<sup>1,2</sup> This device is advantageous because it is simple to use, allows large tissue bites, and can be used to pass multiple sutures simultaneously.

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However, suture passage using the suture lasso is particularly difficult in small rotator cuff tears, where visualization of the undersurface of the rotator cuff is difficult. In addition, far anterior and posterior sutures are difficult to place because the angle of suture passage is awkward and difficult to visualize. In some circumstances, the suture lasso may be used well initially but may then be very difficult to use in other portions of the rotator cuff. When sutures are difficult to place, a combination of

A posterior soft spot viewing portal is established. A thorough glenohumeral diagnostic arthroscopy is performed. A spinal needle is placed through the rotator interval and used to probe structures in the glenohumeral joint to avoid creating a separate anterior working portal. The arthroscope is repositioned through the posterior portal into the subacromial space. An anterolateral working portal is established off the anterolateral corner of the acromion, and a 7-mm cannula is placed. A subacromial bursectomy,

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different suture-passage instruments can be used to effectively repair the rotator cuff arthroscopically.<sup>3</sup>

The use of multiple suture-passage instruments and additional arthroscopy portals to pass sutures in these circumstances increases operating expense and technical complexity. Therefore, it would be beneficial to use a single suture-passing device to place all the sutures in the rotator cuff.

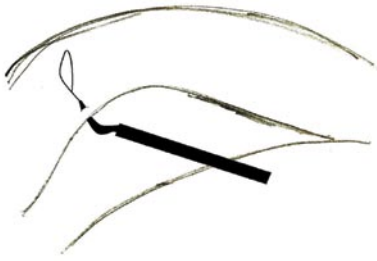
This article describes a novel technique of reverse passage of the suture lasso from the undersurface of the rotator cuff that is a simple, reproducible, and cost-effective solution to suture passage in these difficult scenarios.

## TECHNIQUE

The patient is positioned in the lateral decubitus position. The arm is placed in balanced suspension in 30° of abduction and 30° of forward flexion.

with or without acromioplasty, is performed. The pattern of the rotator cuff tear is determined. Adequate soft-tissue releases are performed as needed. A superolateral working portal is created after localizing the appropriate angle for suture anchor placement with a spinal needle. Suture anchors loaded with Fiberwire sutures are placed through the superolateral portal. An arthroscopic cannula is placed in the anterolateral portal, but it is usually not necessary in the superolateral portal.

The suture lasso is placed through the anterolateral working portal through the undersurface of the rotator cuff (Figure 1). The lasso pierces through to the bursal side of the rotator cuff. The suture lasso wire is then advanced. A suture hook is placed through the superolateral portal to retrieve the suture lasso wire.



**Figure 1.** Diagram of the suture lasso passing from the undersurface of the rotator cuff, piercing through the bursal side of the rotator cuff.



**Figure 2.** A 0-Prolene suture passes through the rotator cuff with 1 limb in the superolateral portal and the other limb in the anterolateral portal.

A 0-Prolene suture is placed in the suture lasso wire. The suture lasso wire, along with the 0-Prolene suture, is brought back through the rotator cuff, exiting the anterolateral portal (Figure 2). The sec-

ond limb of the 0-Prolene suture remains in the superolateral portal. A Fiberwire suture from the suture anchor is retrieved through the anterolateral portal and tied extracorporally to the 0-Prolene suture as a suture shuttle. The second limb of the 0-Prolene suture is then pulled back, retrieving the Fiberwire suture through the rotator cuff and out the superolateral portal, completing the suture passage.

inexperienced shoulder arthroscopists. This technique allows rotator cuff repair using only 2 working portals in addition to the posterior viewing portal. In addition, this technique avoids the need to open additional instruments, which decreases costs and simplifies the procedure. Reverse passage of the suture lasso is particularly useful for placing sutures far anteriorly, posteriorly, or in small rotator cuff tears with limited visualization.

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Multiple sutures are passed using this technique as needed for arthroscopic rotator cuff repair. The sutures are then tied from the anterolateral portal to complete the repair.

### DISCUSSION

Suture passage in arthroscopic rotator cuff repair may be technically challenging. The suture lasso is typically used to pass sutures antegrade through the rotator cuff. Reverse passage of the suture lasso through the undersurface of the rotator cuff is simple and easily reproducible, even by relatively

### AUTHOR'S DISCLOSURE STATEMENT

The author reports no actual or potential conflict of interest in relation to this article.

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