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Title: The Modified Single-Working Portal Technique Using Lasso-Loop Stitch with Needle for Arthroscopic Subscapularis Repair

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Author Questionnaire

1. We have marked your project as author-provided footage, meaning you film the video yourself and provide JoVE with the footage to edit. JoVE will not send the videographer. Please confirm that this is correct.

√ Correct

2. Microscopy: Does your protocol require the use of a dissecting or stereomicroscope for performing a complex dissection, microinjection technique, or something similar? **Yes, done**

3. Software: Does the part of your protocol being filmed include step-by-step descriptions of software usage? **No**

4. Proposed filming date: To help JoVE process and publish your video in a timely manner, please indicate the proposed date that your group will film the **interviews** here: **07/30/2025**

When you are ready to submit your video files, please contact our China Location Producer, Yuan Yue.

Current Protocol Length

Number of Steps: 9
Number of Shots: 16

Introduction

NOTE to VO producer: Please record the interview statements 1.1, 1.2 and 1.3

1.1. This research focuses on arthroscopic surgery techniques and aims to improve the methods to make the surgery simpler and more effective.

1.1.1. *B-roll:2.2.1*

What are the current experimental challenges?

1.2. Traditional shoulder arthroscopy typically requires both anterior and posterior portals. However, recent developments have introduced simpler, less invasive single-portal techniques, though these methods can present challenges in suture management and may increase trauma.

1.2.1. *B-roll:2.4.1*

What advantage does this protocol offer compared to other techniques?

1.3. This protocol significantly simplifies the operation; moreover, Lasso-loop suture is more stable and can reduce the cost and increase the operation benefit without using other consumables.

1.3.1. *B-roll:3.2.1*

Title Card

All procedures involving human participants were part of a retrospective study and written informed consent was obtained from patients

Protocol

2. Procedure for Lasso-loop Stitch with Needle

Demonstrator: Jianfeng OuYang

2.1. To begin, identify the superior third of the subscapular tear via the posterior portal created in the patient's shoulder area **[1]**. Release the subscapular tendon to cover the lesser tuberosity **[2]** and freshen the lesser tuberosity to induce bleeding **[3]**.

2.1.1. SCOPE: IMG_001.MOV 00:00 – 00:15

2.1.2. SCOPE: IMG_001.MOV 00:16 – 00:30

2.1.3. SCOPE: IMG_001.MOV 00:31 – 00:44

2.2. Then, implant a two-load anchor into the subscapular's footprint **[1]**.

2.2.1. SCOPE: IMG_002.MOV 00:15 – 00:27

2.3. Insert the needle through the tear from the anterior portal **[1]**, adjust the loop size **[2]**, and withdraw slowly **[3]**.

2.3.1. SCOPE: IMG_003.MOV 00:15 – 00:22

2.3.2. SCOPE: IMG_003.MOV 00:24 – 00:28

2.3.3. SCOPE: IMG_003.MOV 00:29 – 00:36

2.4. Next, pull out the PDS thread loop and one of the white and blue anchor sutures through the anterior portal with a grasper **[1]** and pass two anchor sutures completely through the PDS thread loop in vitro **[2]**.

2.4.1. SCOPE: IMG_004.MOV 00:06 – 00:17

2.4.2. LAB MEDIA: IMG_1320.MOV Timestamps: 00:02 – 00:14

2.5. Then, pull the PDS loop to pass the mid-portion of the anchor suture through and create a suture loop in the subscapularis **[1]**.

2.5.1. LAB MEDIA: IMG_1320.MOV Timestamps: 00:18 – 00:31

2.6. Pass the free end of the suture through this suture loop **[1]** and pull it tight to form a self-cinching stitch of the subscapularis **[2]**.

2.6.1. LAB MEDIA: IMG_1320.MOV Timestamps: 00:45 – 00:55

2.6.2. SCOPE: IMG_7 月 3 日.MOV Timestamps: 00:27:04 – 00:27:25

2.7. Do not tighten the self-cinching stitch or it will move the subscapularis away from the lesser tuberosity footprint **[1]**.

2.7.1. SCOPE: IMG_008.MOV 00:09 – 00:18

2.8. Then, tighten the other end of the anchor suture to secure the subscapularis to the lesser tuberosity **[1]**.

2.8.1. SCOPE: IMG_009.MOV 00:05 – 00:20

2.9. Finally, grab the two ends of the white and blue anchor sutures **[1]**; tie and fix them successively **[2]**.

2.9.1. SCOPE: IMG_010.MOV 00:04 – 00:10

2.9.2. SCOPE: IMG_010.MOV 00:18 – 00:27

Results

3. Results

3.1. The procedure was performed on 18 patients, and they were all assessed post-operatively **[1]**. Pain, measured using the Visual Analog Scale, decreased significantly at 12 months post-operation compared **[2]** to preoperative values **[3]**.

3.1.1. LAB MEDIA: Table 2

3.1.2. LAB MEDIA: Table 2. *Video editor: Highlight the cell under "VAS" in the "12 months post-operation" row*

3.1.3. LAB MEDIA: Table 2. *Video editor: Highlight the cell under "VAS" in the "pre-operation" row*

3.2. Shoulder functionality and functional outcomes, evaluated by the Constant-Murley score and the American Shoulder and Elbow Surgeons score, improved significantly at 12 months post-operation **[1]** relative to the preoperative values **[2]**.

3.2.1. LAB MEDIA: Table 2. *Video editor: Highlight the cell under "Constan score," and "ASES score" in the "12-month post-operation" row*

3.2.2. LAB MEDIA: Table 2. *Video editor: Highlight the cell under "Constan score," and "ASES score" in the "pre-operation" row*

3.3. Shoulder flexion, external rotation and internal rotation at ninety degrees abduction increased significantly at 12 months post-operation **[1]** compared to the preoperative measurements **[2]**.

3.3.1. LAB MEDIA: Table 3. *Video editor: Highlight the entire "12 months post-operation" row*.

3.3.2. LAB MEDIA: Table 3. *Video editor: Highlight the entire "pre-operation" row.*