

+ Arthroscopic Biceps Tenodesis

A shoulder technique
guide as described by

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BICEPTOR 
Disposable Kit

Introduction

The Smith+Nephew BICEPTOR[®] System was created to provide a simplified procedure for biceps tenodesis. The BICEPTOR System does not require whipstitching the tendon, resulting in an efficient all-arthroscopic repair. In an all-arthroscopic repair, the surgeon does not need to pull the tendon out of the body, and repair is irrespective of body habitus or soft tissue swelling. The technique allows the surgeon to maximize soft tissue-to-bone surface area and avoids the need for tendon resection prior to fixation and can give the surgeon more control over tensioning. The result is a strong repair using the BIOSURE[®] PK Interference Screw. This device may be utilized in an all-arthroscopic supra-pectoralis location or in a mini open supra- or sub-pectoralis fashion.

The following technique guide is provided for informational and educational purposes only and is not intended to serve as medical advice, nor endorse any named institution. It was prepared under the guidance of Dr. Scott Trenhaile in collaboration with the physicians. It contains a summary of medical techniques and opinions based upon their training and expertise in the field, along with their knowledge of Smith+Nephew products. The views and opinions expressed in this technique are those of the physicians and may not reflect the position, opinion, or guidelines for clinical care of any other person, institution, scientific association, or product manufacturer, including Smith+Nephew.

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Figure 1



Figure 2

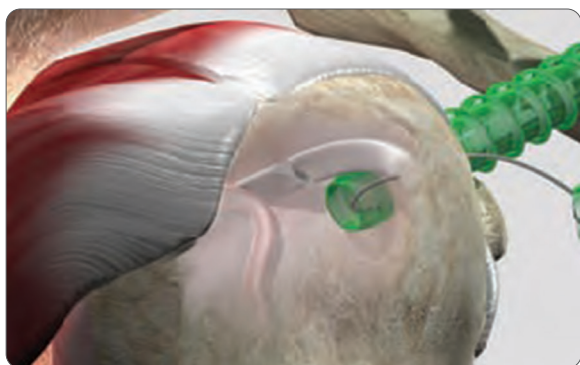


Figure 3



Figure 4

Patient positioning

Place the patient in either the lateral decubitus or beach chair position.

Portal placement

Create standard arthroscopic portals through which a diagnostic arthroscopy may be performed. These portals include a posterior soft spot portal, a rotator interval anterior portal, and possibly an anterior accessory portal. Address glenohumeral joint pathology prior to performing long head of biceps (LHB) tenodesis.

1. Place a needle at the anterolateral edge of the acromion into the shoulder joint just anterior to the supraspinatus tendon and into the biceps (**Figure 1**).
2. Introduce a #1 monofilament suture through the needle and biceps tendon. Retrieve the suture out the rotator interval portal (**Figure 2**).
3. Remove the needle and retrieve the remaining arm of suture. With both arms exiting the rotator interval portal, tie half hitches onto the biceps for security of the tendon.
4. For additional security, pass one of the suture limbs around the biceps again and tie with half hitches a second time to create a suture ligature effect.
5. Cut the biceps tendon through the anterior interval portal at its insertion point onto the labrum but below the suture (**Figure 3**). Debride any biceps stump that remains on the labrum.
6. Create a standard lateral portal to clear bursal tissue from the subacromial space. Arthroscopic tenodesis is recommended at this point.
7. Create a biceps tenodesis portal by introducing a needle into the skin until the humerus is engaged. This portal is typically inferior and lateral to the rotator interval portal. March the needle laterally off the humerus and then back again medially to confirm the intertubercular bicipital groove location. Introduce a cannula and direct it superiorly after encountering the humerus so it can be visualized in the subacromial space (**Figure 4**).

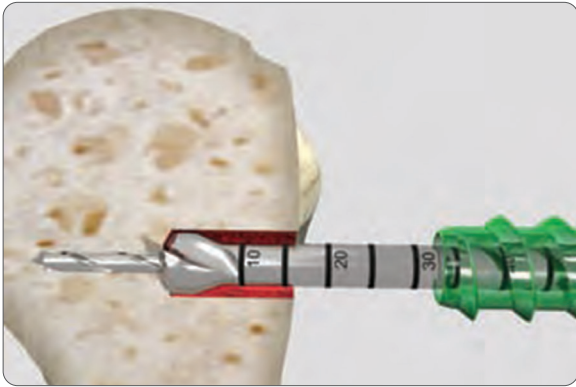


Figure 5

Arthroscopic dissection

1. Perform a bursectomy down the face of the humerus anteriorly until the supra-pectoralis location is identified.
2. Incise the transverse ligament between the lesser and greater tuberosity to identify the LHB in the groove.
3. Use arthroscopic scissors to unroof the biceps more proximally until the rotator interval is reached.
4. To determine the size of the BIOSURE[®] PK Interference Screw needed, insert the small tendon fork and capture the tendon. If the tendon fits comfortably inside the small tendon fork, use a 7mm Endoscopic XL drill and a 7mm BIOSURE PK Interference Screw. If the tendon does not fit comfortably within the fork, try a medium tendon fork and then a large tendon fork. The medium tendon fork corresponds to an 8mm interference screw and the large tendon fork corresponds to a 9mm interference screw. Use line-to-line sizing for drilling the holes. For example, drill an 8mm hole for an 8mm screw.
5. Use the tendon fork to move the biceps tendon to the side and find the desired location to tenodesise the tendon. Place the tendon fork in this location and insert a 2.4mm guide wire through the tendon fork, perpendicular to the humeral shaft in the bicipital groove.
6. Remove the tendon fork, leaving the guide wire in place. Pass the appropriate corresponding Endoscopic XL drill over the guide wire through the anterior cortex (**Figure 5**).
7. Drill 5mm more than the interference screw length. Suggested reamer size corresponds to suggested screw size (an 8mm reamer for an 8mm screw).
8. Remove the drill and guide wire. Using a shaver, clean soft tissue around the edge of the drill hole. This is an important step to enable insertion of the tendon and screw. At this point, optionally tap the hole with the corresponding size BICEPTOR[®] Tap.



Figure 6

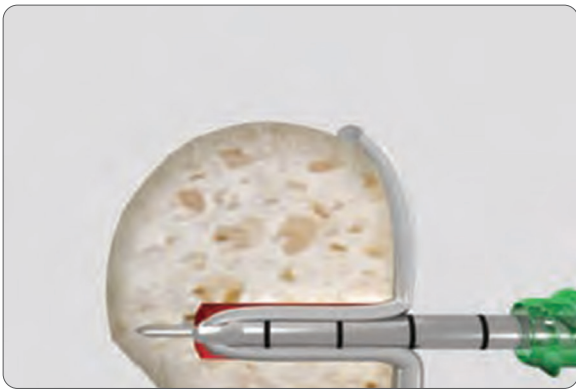


Figure 7

9. Using the proximal sutures, tension the biceps tendon to return the LHB to the desired tension. The tendon fork is then introduced into the anterior cannula to capture the biceps tendon for insertion into the drill hole until the tendon reaches the far cortex (**Figure 6**).
10. When pushing the tendon into the prepared hole, release the tension on the tendon to allow it to slide into the hole more easily.
11. Put a Bi-Grip pin puller on the end of the 1.5mm guide pin and insert through the cannulation in the tendon fork.
12. Maintain tension on the monofilament sutures proximally and provisionally pin the tendon in place with a guide wire, traversing the far cortex using the tendon fork as a guide.
13. Hammer the guide pin until the pin puller “bottoms out” on the tendon fork (**Figure 7**).
14. Remove the pin puller and the tendon fork, leaving the guide pin in place. Make sure to completely release the tension on the monofilament and tendon when removing the tendon fork (**Figure 7, inset**).

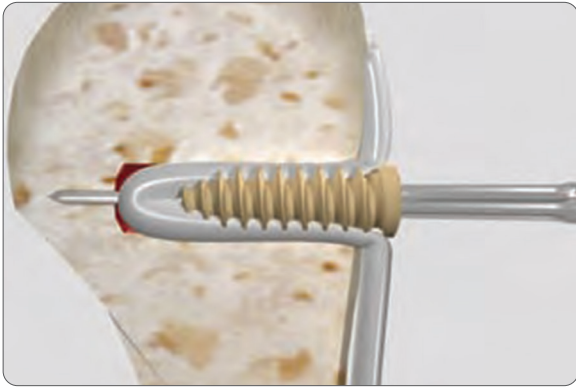


Figure 8

PLACE the interference screw on the BICEPTOR[®] Driver and insert the interference screw over the guide pin (**Figure 8**).

REMOVE the driver and pin and excise any excess tendon (**Figure 9**).

IF extra grip is required to remove the guide pin, replace the Bi-Grip pin puller on the guide pin and remove the guide pin.



Figure 9

Ordering information

BICEPTOR^o Tenodesis Repair Disposable Kits

Reference #	Description
Set includes:	BIOSURE ^o PK Interference Screw, 1.5mm guide pin, and 2.4mm guide wire
72202299	7 x 15mm BICEPTOR Disposable Kit
72202300	8 x 15mm BICEPTOR Disposable Kit
72202301	9 x 15mm BICEPTOR Disposable Kit
72202357	7 x 25mm BICEPTOR Disposable Kit
72202358	8 x 25mm BICEPTOR Disposable Kit
72202359	9 x 25mm BICEPTOR Disposable Kit

BICEPTOR Instrumentation

Reference #	Description
72202190	BICEPTOR Driver
72202193	Tendon Fork, small
72202192	Tendon Fork, medium
72202191	Tendon Fork, large
72202194	Bi-Grip Pin Puller
72202198	7mm Endoscopic Drill, XL
72202297	8mm Endoscopic Drill, XL
72202298	9mm Endoscopic Drill, XL
72202195	7mm BICEPTOR Tap
72202196	8mm BICEPTOR Tap
72202197	9mm BICEPTOR Tap

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Additional instruction

To order the instruments used in this technique, call **+1 800 343 5717** in the U.S. or contact an authorized Smith+Nephew representative. Prior to performing this technique, consult the Instructions for Use documentation provided with individual components – including indications, contraindications, warnings, cautions and instructions.

CAUTION: U.S. Federal law restricts this device to sale by or on the order of a physician.

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