

Arthroscopic Proximal  
Biceps Tenodesis using  
the Smith & Nephew  
TWINFIX<sup>◇</sup> TI QUICK-T<sup>◇</sup>  
Fixation System.



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## Arthroscopic Proximal Biceps Tenodesis using the Smith & Nephew TWINFIX<sup>®</sup> TI QUICK-T<sup>®</sup> Fixation System.

### Introduction

Degeneration of the long head of the biceps can occur in conjunction with rotator cuff tears or on its own. There is often a failure of the sling mechanism holding the biceps in the groove and this may result in secondary damage to the insertion of the subscapularis tendon.

In cases of disease of the long head of the biceps, either a tenotomy or tenodesis of the tendon is indicated. Usually in elderly patients, a simple tenotomy is done arthroscopically, whereas in younger, more active patients a tenodesis is preferred.

Principles of tenodesis: to allow for healing of the tendon to the bicipital groove, the bone surface at the base of the bicipital groove is decorticated. The biceps is then transected at its origin at the superior pole of the glenoid. It is then fixed by various means: either into a pre-made hole in the humeral head using bone anchors with sutures; using a tenodesis screw; or, using the QUICK-T device.

Fixing the tendon to the bicipital groove also avoids the need for painful sliding of the tendon in its groove and preserves elbow flexion and supination power. Furthermore, it avoids the bulging of the biceps in the upper arm, which some patients may find cosmetically unacceptable.

Where tenodesis is indicated, we favour the QUICK-T device for older patients (1 or 2 of these could be used) but for stronger, younger athletes we will use a tenodesis screw with increased pull-out strength.

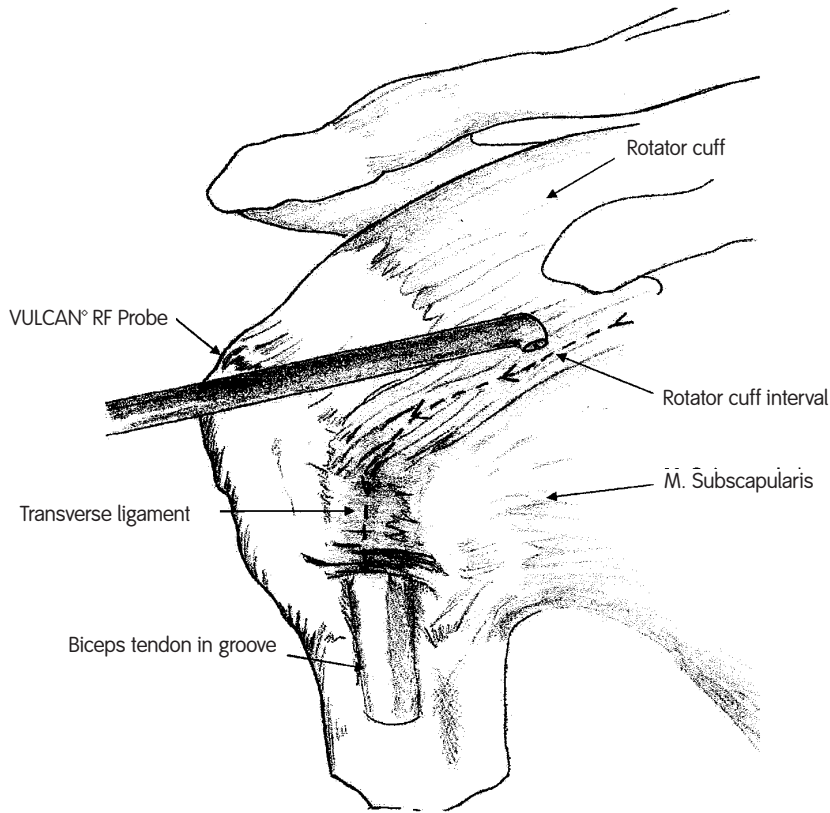


Figure 1. Opening of the rotator interval to expose the biceps tendon from its origin to the B.T. groove.

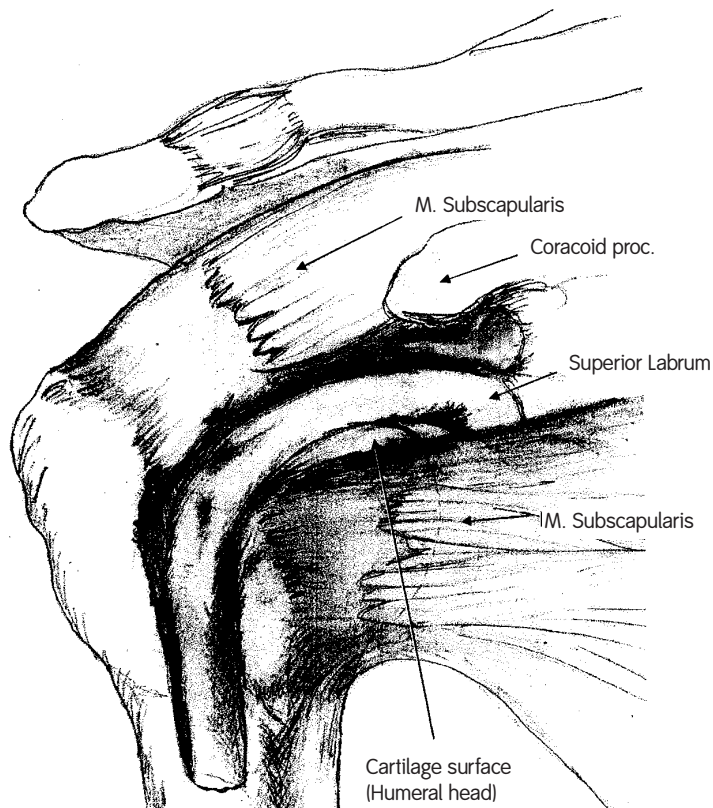


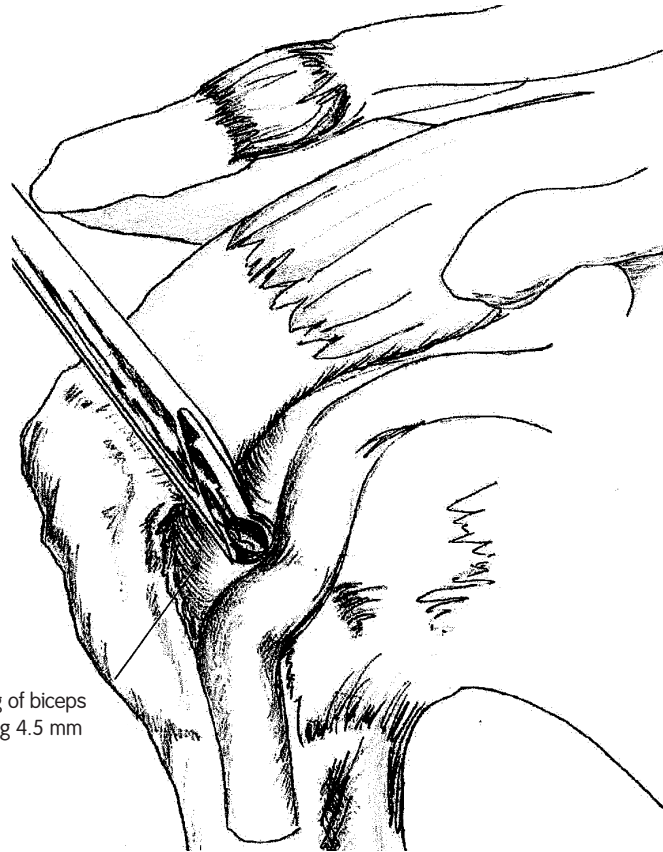
Figure 2. Rotator interval open, revealing the biceps tendon.

## Technique

Perform a standard shoulder arthroscopy and address any associated pathology.

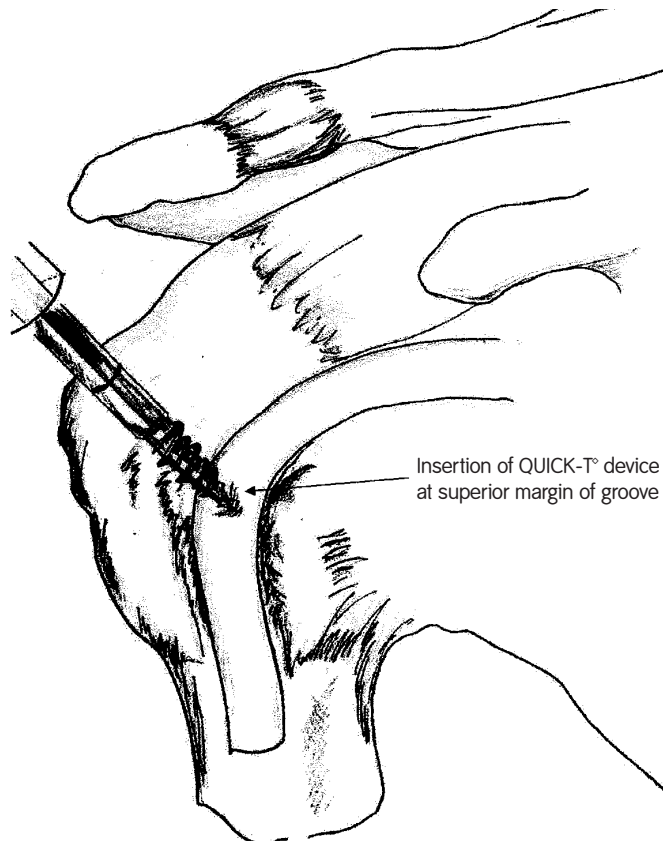
1. Inspect the glenohumeral joint first and confirm the pathology.
2. If the rotator cuff is torn, access is relatively easy in the subacromial space. If the rotator cuff is intact, open the rotator interval (Figure 1) enough to allow access to the bicipital tendon from the superior view in the subacromial space (Figure 2).
3. Repair any associated pathology, e.g., subscapularis repair. Perform an acromioplasty, if necessary.
4. Prior to repairing a torn rotator cuff, tenodesis the biceps tendon. With the arthroscope in the lateral subacromial portal, establish an antero-lateral accessory portal.

5. Lift the biceps out of its groove and decorticate the groove (Figure 3).
6. Place a cannula through the anterolateral portal for QUICK-T device passage. Under direct vision, screw the 5.0 mm QUICK-T device through the tendon and into the bicipital groove (Figure 4).



Roughening of biceps groove using 4.5 mm notch burr

Figure 3. Preparation of intertubercular groove.



Insertion of QUICK-T® device at superior margin of groove

Figure 4. Fixation of the biceps tendon.

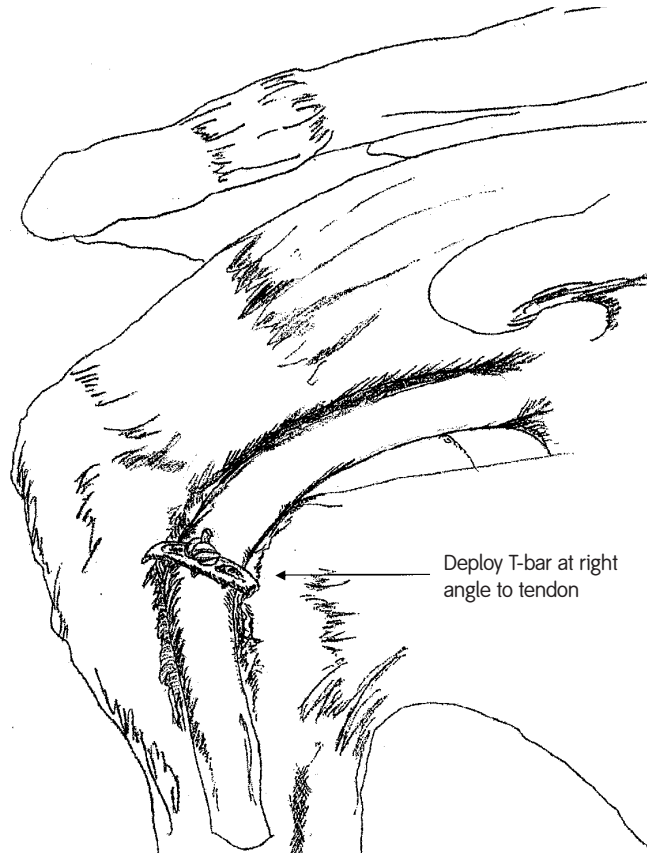


Figure 5. T-bar deployed at right angle to tendon.

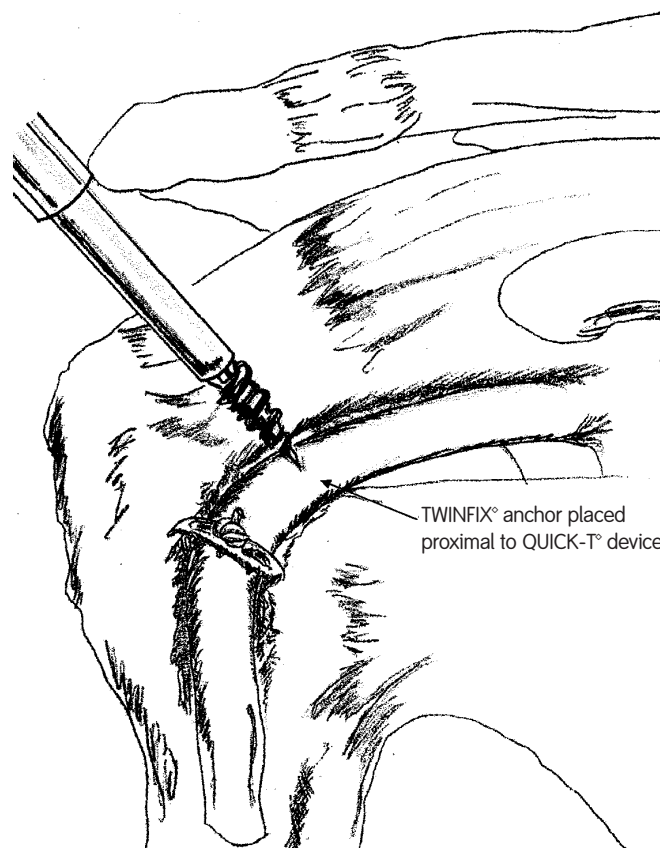


Figure 6. Optional: Use a TWINFIX® anchor to increase fixation security.

- Using the Smith & Nephew QUICK-T® Knot Pusher Suture Cutter, slide the knot and T-bar down, ensuring that it contacts the biceps tendon at right angles to the length of the tendon and that the biceps tendon is secured to the bicipital groove (Figure 5). Cut the sutures leaving a 3 mm tail. **Note:** Orienting the eyelet of the QUICK-T device at right angles to the length of the tendon facilitates placement of the T-bar. The T-bar can be simply guided onto the tendon with an instrument, e.g., non-toothed grasper.
- Optional:** Insert a second QUICK-T device to ensure better fixation. Alternatively, a TWINFIX anchor can also be inserted for extra fixation. Use two sutures to make two “locking loops” in the tendon (Figure 6).

9. Transect the biceps at its origin with a punch or radiofrequency device. If the section of the biceps tendon proximal to the tenodesis site appears too long, the loose part of the tendon may be cut about 1 cm away from the QUICK-T device and removed (Figure 7). **Note:** Correct tendon length is ensured by doing the tenotomy only after fixation.

#### Post operative care.

Place the patient in a sling and limit elbow extension, as well as active flexion and supination of the elbow, for 3-4 weeks.

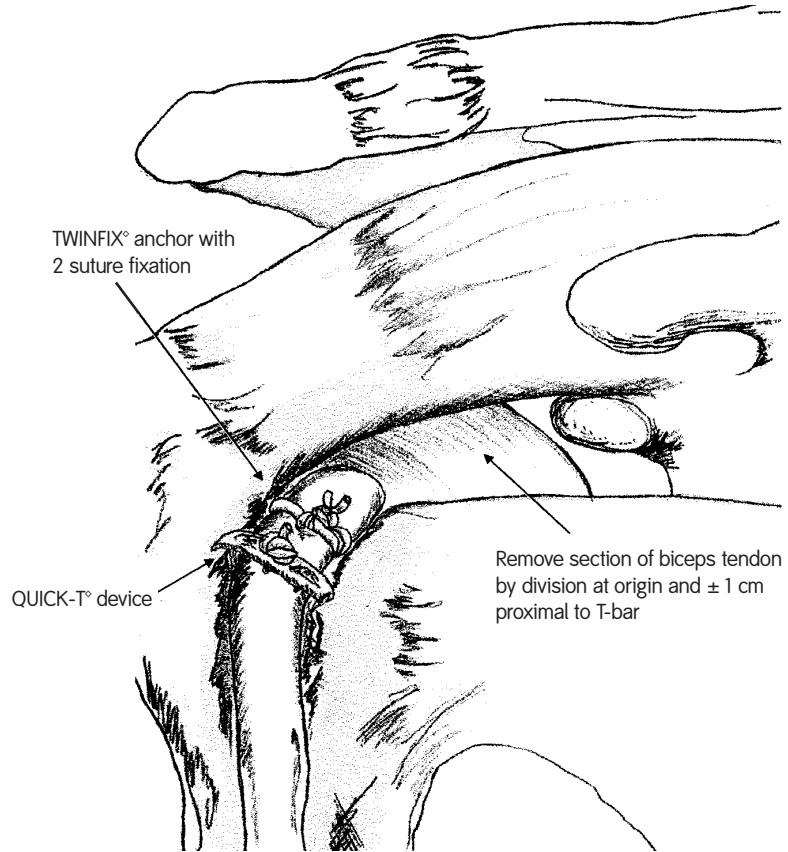


Figure 7. Final result using additional anchor fixation.

## Additional Instruction

Prior to performing this technique, consult the Instructions for Use documentation provided with individual components — including indications, contraindications, warnings, cautions, and instructions.

Courtesy of Smith & Nephew, Inc.,  
Endoscopy Division

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