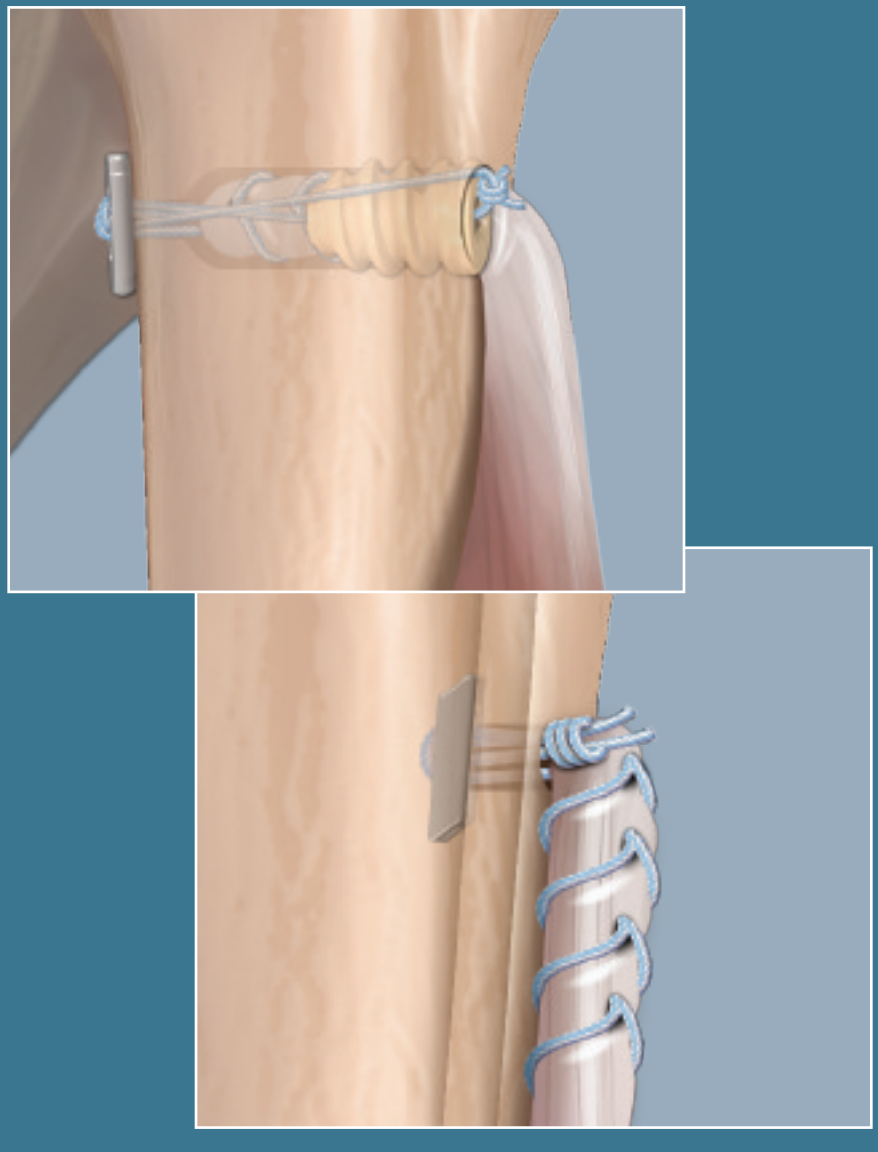
Arthrex®

Subpectoral Biceps Tenodesis using Cortical Buttons

Surgical Technique



Subpectoral Biceps Tenodesis

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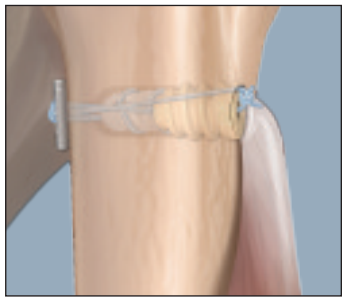
Introduction

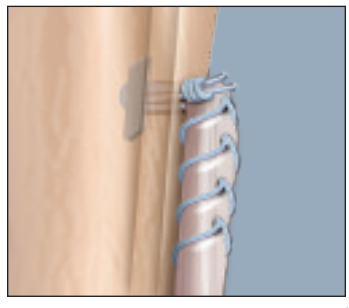
Subpectoral biceps tenodesis using cortical buttons and the tension slide technique allows the surgeon to tension and repair the long head of the biceps in either a bicortical or unicortical repair.



Bicortical

The bicortical technique utilizes the BicepsButton to draw the tendon against the distal cortex of the bone socket. A tenodesis screw may be added to further augment the repair.

The unicortical technique utilizes the 8.5 mm long Proximal Tenodesis Button, which has angled edges to promote a toggle effect when the button contacts the far cortex. The tension slide technique draws the tendon onto the humerus.



Unicortical

Anatomic Considerations

The location of the axillary and radial nerves in relation to the bicortical tunnel needs to be taken into account. Cadaveric research shows that when drilling in the subpectoral region, the drill hole is at a mean of 36.7 mm from the axillary nerve and 48 mm from the radial nerve.*

Distal Biceps Repair Implant System

Surgical Technique

Place the patient in the beach chair or lateral decubitus position with the arm in 90 degrees of abduction and 60-90 degrees of external rotation. Make a 2 to 3 cm incision in the axilla at the inferior border of the pectoralis major. Bluntly dissect to identify the pectoralis major and the long head of the biceps.

Proximal Tenodesis Implant System

*Data on file

Ordering Information

Bicortical Subpectoral Tenodesis

Implants:

Distal Biceps Repair Implant System (includes BicepsButton, Button Inserter, FiberLoop, 7 mm x 10 mm PEEK Tenodesis Screw and 3.2 mm Drill Pin)	AR-2260
BicepsButton, 12 mm	AR-2261
#2 FiberLoop w/straight needle	AR-7234
PEEK Tenodesis Screw, 7 mm x 10 mm	AR-1670PS

Required Instruments: Included in Bio-Tenodesis Screw System (AR-1675S):

Driver for Bio-Tenodesis Screws	AR-1670DB-01
Tear Drop Handle w/ Suture Cleat	AR-2001BT
Headed Reamer, 7 mm, cannulated	AR-1407

Required Disposables:

Button Inserter	AR-2262
Drill Pin, 3.2 mm	AR-2263
Free Needle w/Nitinol Loop	AR-7281
Nitinol Suture Passing Wire	AR-1255-18

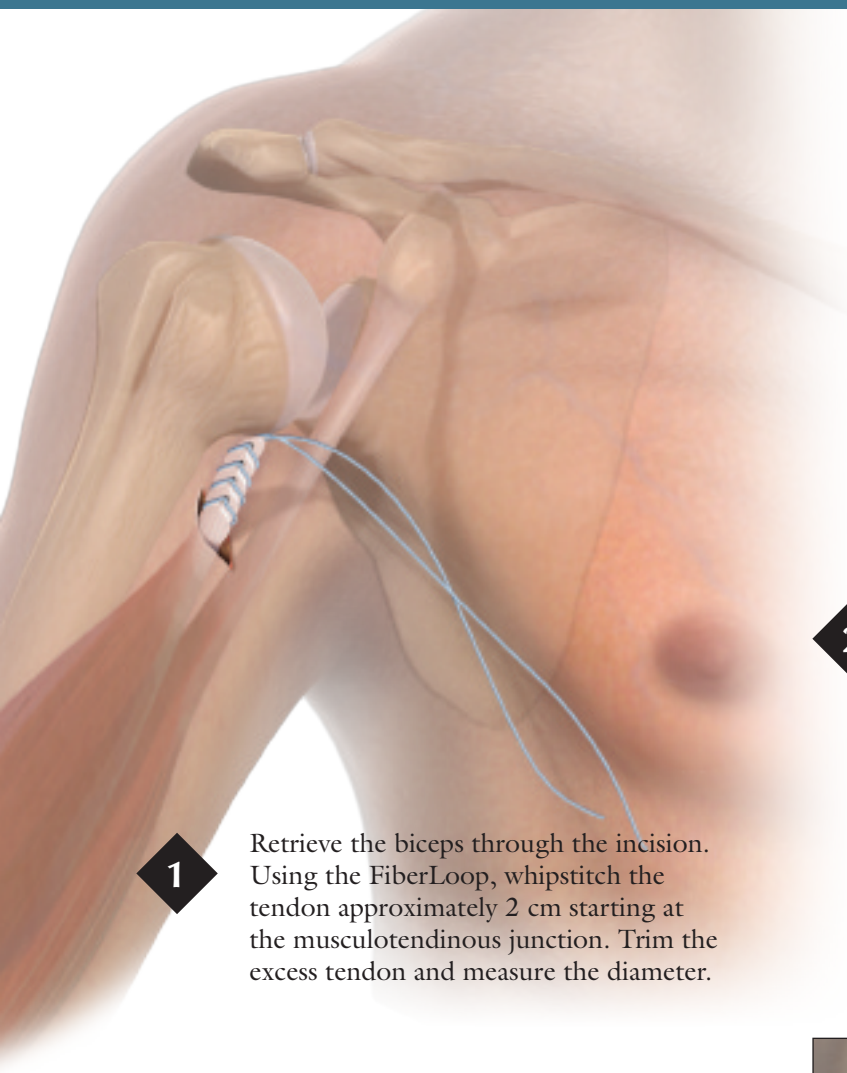
Unicortical Subpectoral Tenodesis

Implants:

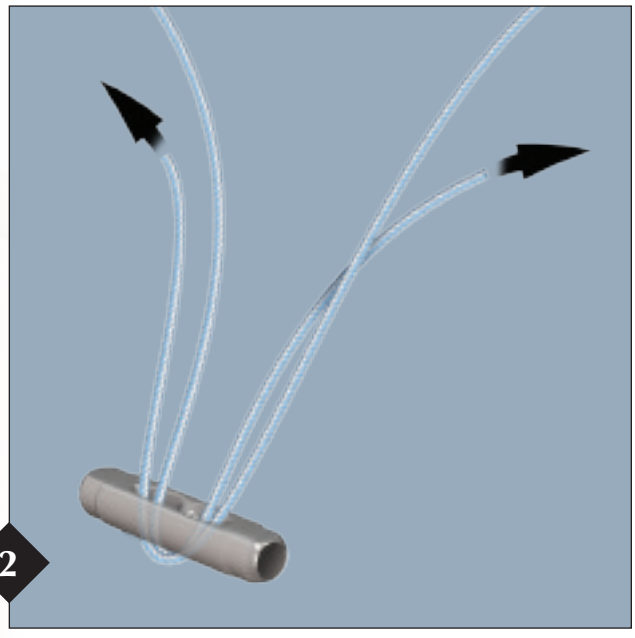
Proximal Tenodesis Implant System (includes Proximal Tenodesis Button, FiberLoop, Free Needle, Shoehorn Cannula and 3.2 mm Drill Pin)	AR-2290
Proximal Tenodesis Button	AR-2291
#2 FiberLoop w/ straight needle	AR-7234

Required Disposables:

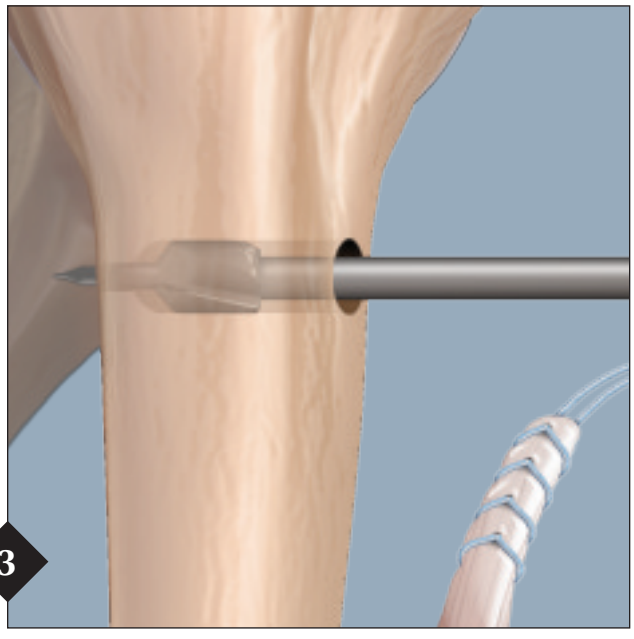
Free Needle w/ Nitinol Loop	AR-7281
Drill Pin, 3.2 mm	AR-2263
Shoehorn Cannula	AR-6565



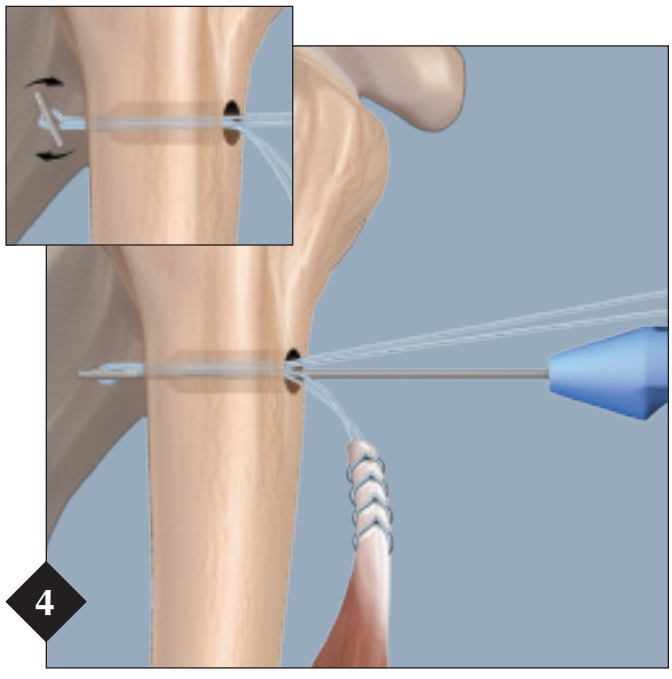
1 Retrieve the biceps through the incision. Using the FiberLoop, whipstitch the tendon approximately 2 cm starting at the musculotendinous junction. Trim the excess tendon and measure the diameter.



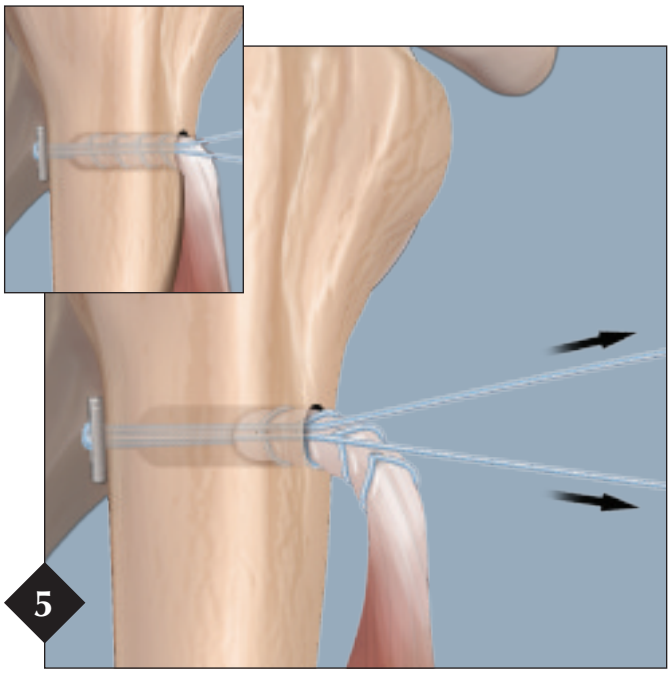
2 Thread one limb of suture through one side of the BicepsButton and back through the opposite side. Thread the other suture limb through the button in the same manner, starting on the opposite side of the first suture limb. Pull on each suture limb simultaneously to ensure that the button slides freely on the sutures.



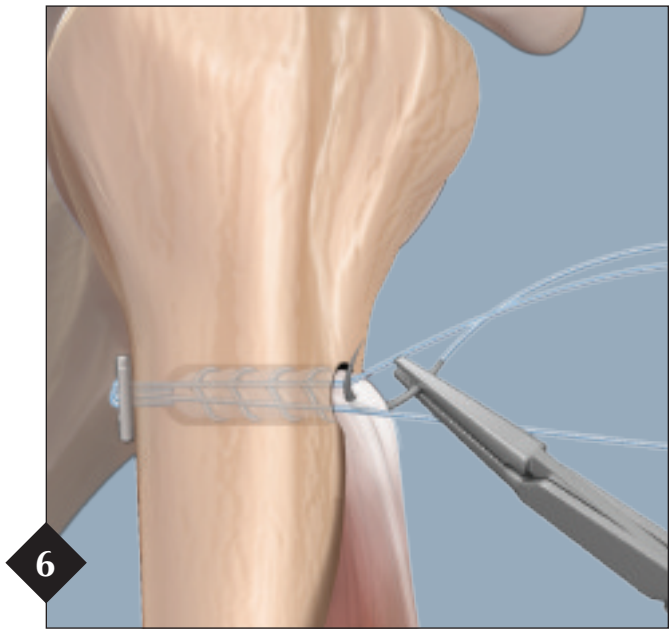
3 Drill a 3.2 mm bicortical tunnel 1 cm above the inferior border of the pectoralis tendon and ream a unicortical hole, which is line-to-line with the biceps tendon.



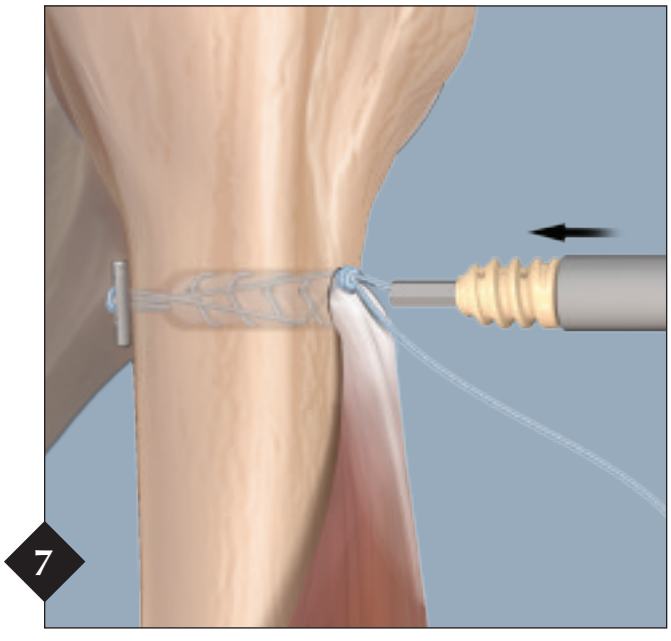
4 Hold tension on the suture limbs and insert the tip of the Button Inserter into the end of the BicepsButton. Maintain tension on the sutures and insert the button through both cortices of the humerus. Use fluoroscopy to verify that the button is properly deployed. Pull back on the lever on the inserter to release the button.



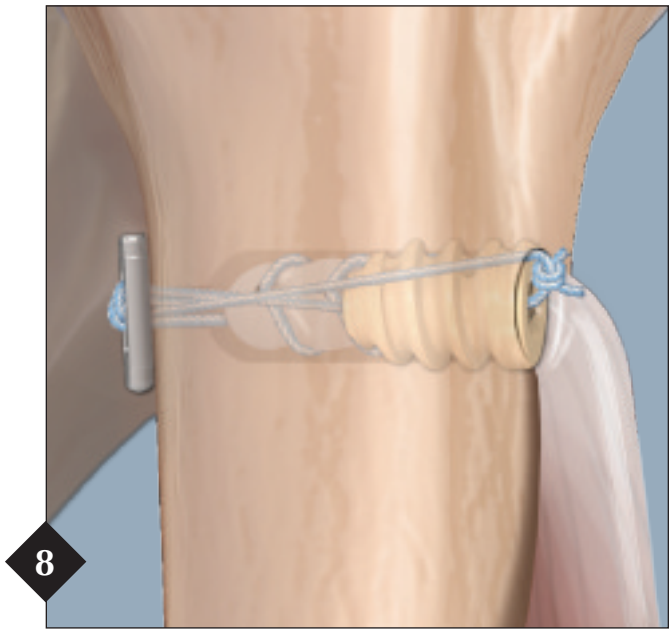
Pull on the free suture limbs to seat the button against the humerus. Tension each suture limb to dock the tendon into the bone tunnel.



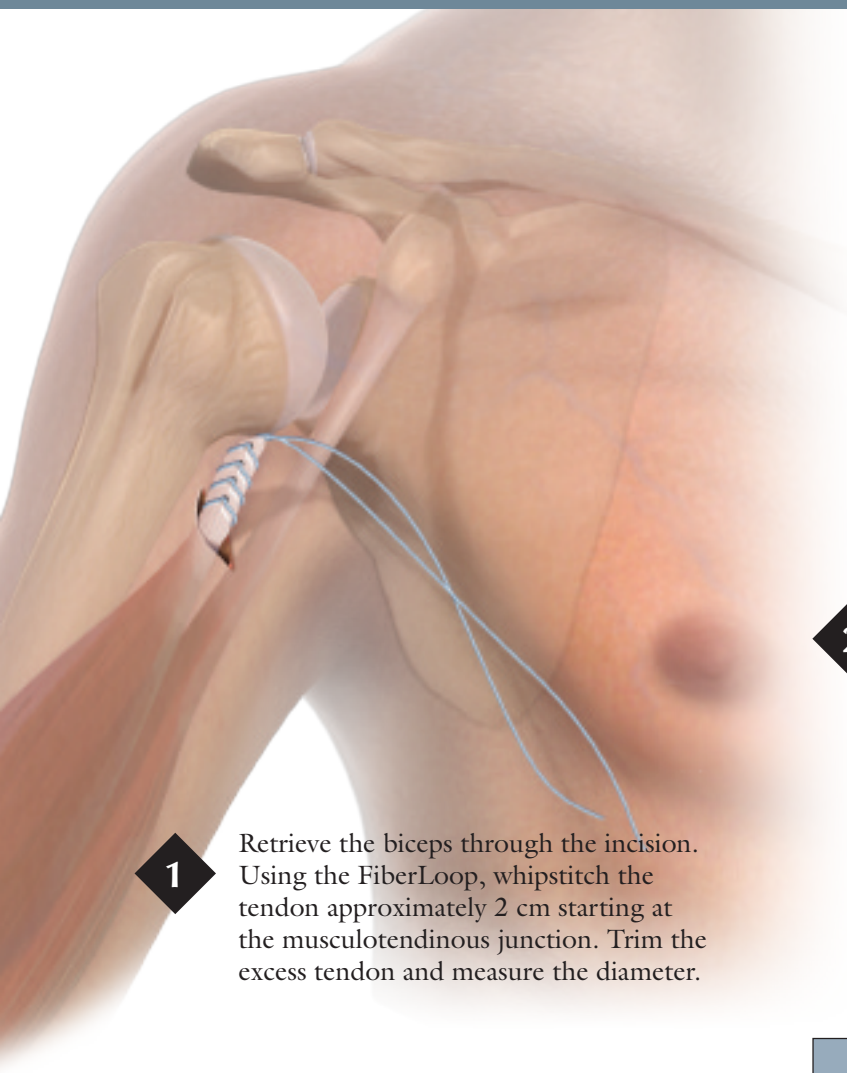
Once the tendon is fully seated, use a free needle and pass one suture limb through the tendon and tie a knot. Use a knot pusher if necessary.



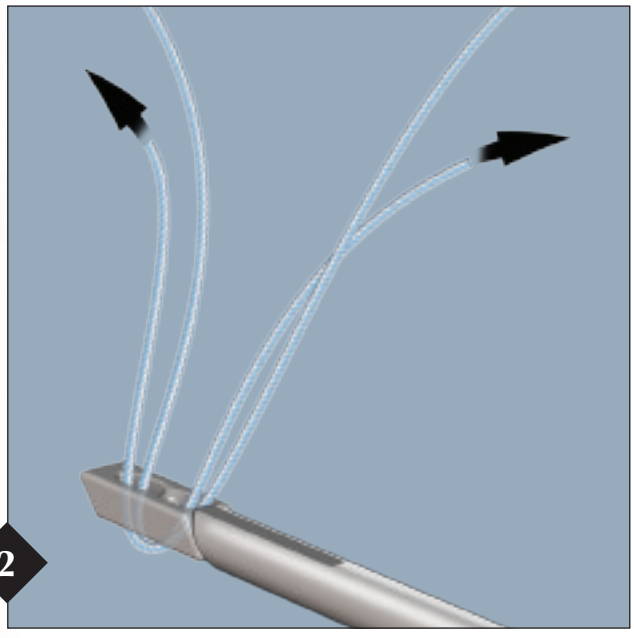
If the surgeon chooses to incorporate a Tenodesis Screw into the repair, load the screw onto the Tenodesis driver and load one suture limb through the driver. Insert the screw so it seats flush with the anterior cortex.



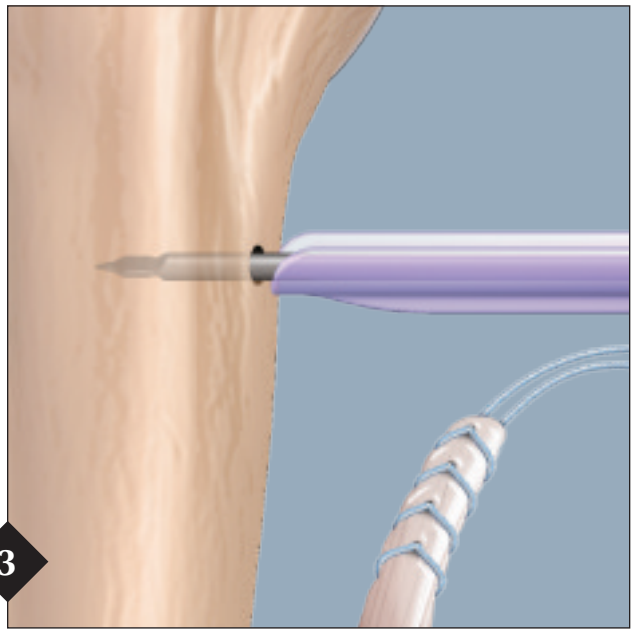
Tie the suture limbs over the screw to complete the repair.



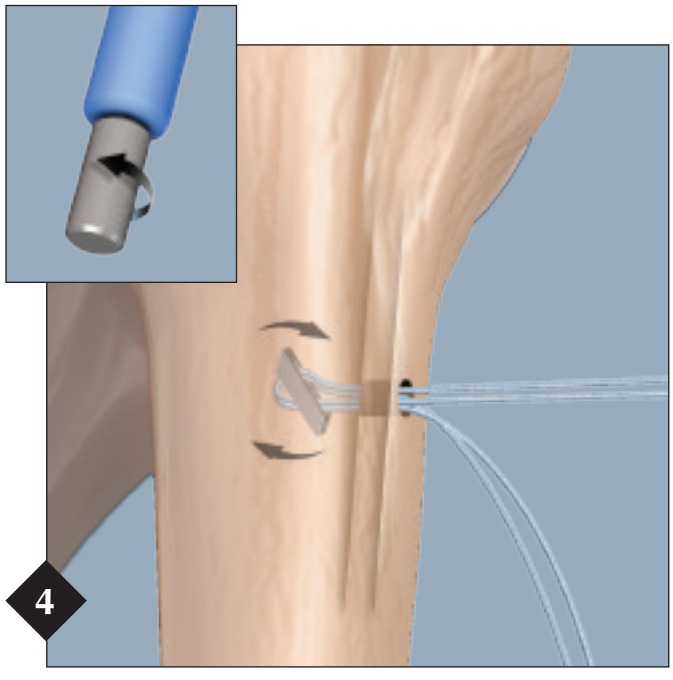
1 Retrieve the biceps through the incision. Using the FiberLoop, whipstitch the tendon approximately 2 cm starting at the musculotendinous junction. Trim the excess tendon and measure the diameter.



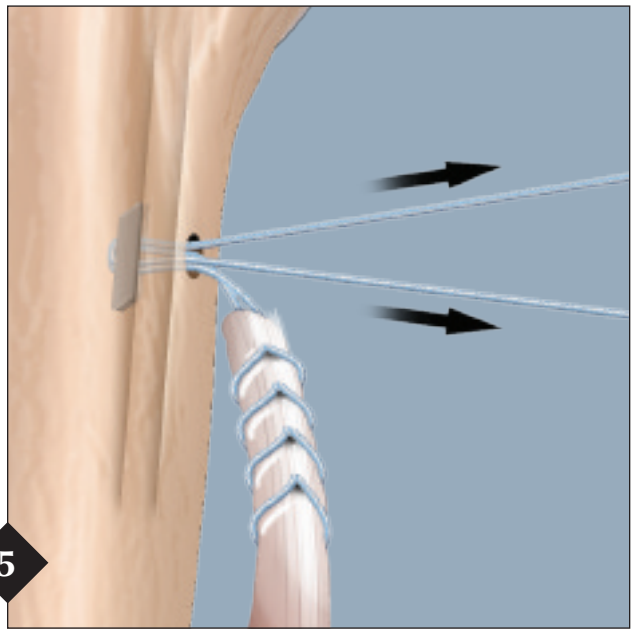
2 Thread the sutures through the Proximal Tenodesis Button the same way as in Step 2 in the Bicortical Technique. The suture limbs should exit on the long side of the button indicated by the black line on the inserter. Pull on each suture limb simultaneously to ensure that the button slides freely on the sutures.



3 Drill a unicortical hole in the humerus 1 cm above the inferior border of the pectoralis tendon using the 3.2 mm Drill Pin. The Shoehorn Cannula can be used as a soft tissue protector.



4 Insert the button until it makes contact with the far cortex. Remove the cannula and unthread the button from the inserter by turning counterclockwise on the knurled hub. Pull on all sutures to flip the button in the canal and remove the inserter. Use fluoroscopy to confirm button deployment.



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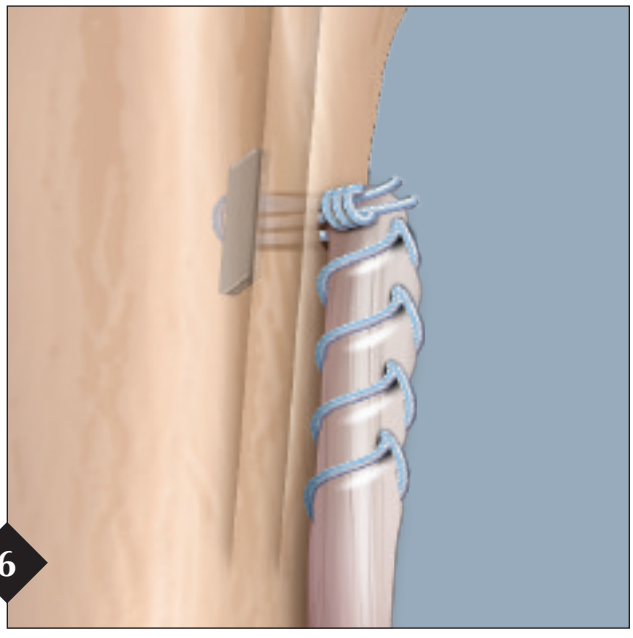
Pull on the free suture limbs to reduce the tendon onto the humerus.



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Once the tendon is fully reduced, use the Free Needle to pass one limb of suture through the tendon and tie a knot to complete the repair.

These surgical techniques were developed in cooperation with Thomas Hackett, M.D., Vail, CO, Paul Sethi, M.D., Greenwich, CT, Reuben Gobezie, M.D., Cleveland, OH and partially based on the paper: Mithoefer K. Subpectoral Biceps Tenodesis Using Dynamic Endobutton Fixation in a Humeral Bone Tunnel With Interference Screw Augmentation. *Techniques in Shoulder & Elbow Surgery* 2011; 12(3):51-75.