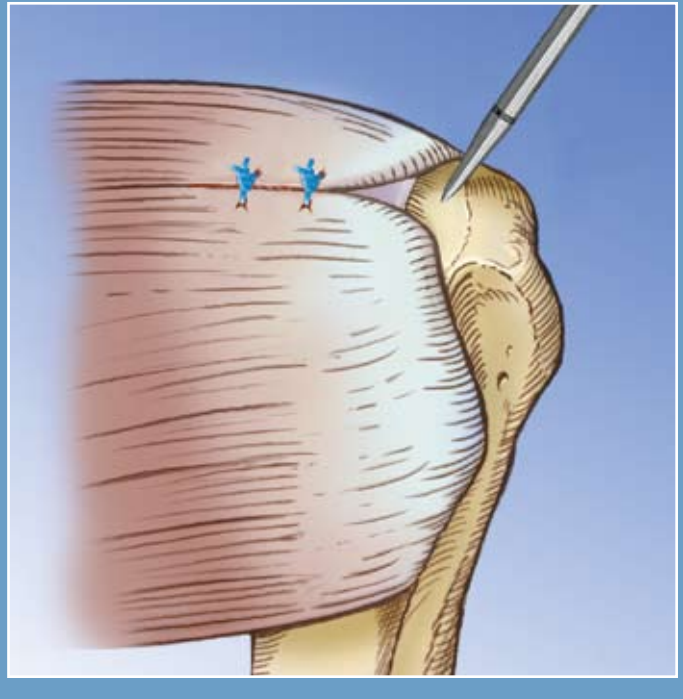
Arthrex®

Double Row Rotator Cuff Repair using the Bio-Corkscrew® FT

Surgical Technique

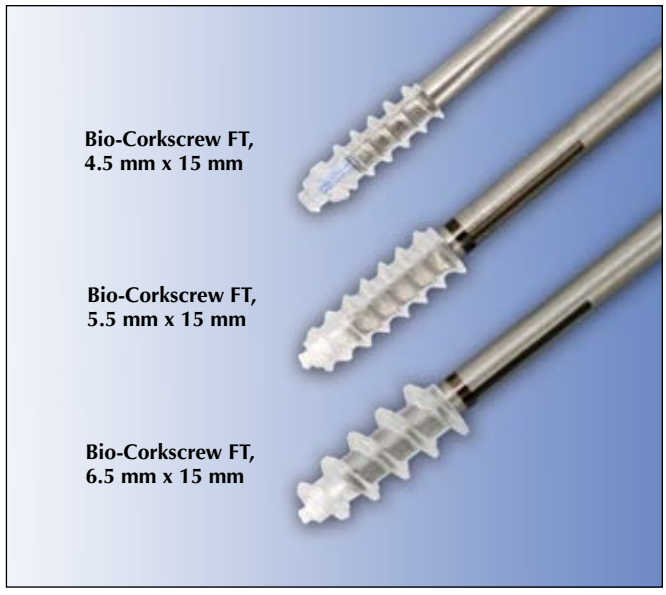


Double Row Rotator Cuff Repair

Introduction

In the progression of arthroscopic treatment of rotator cuff tears, the double row arthroscopic rotator cuff repair was developed. This advanced procedure is intended to help reestablish the normal footprint of the rotator cuff, enhance mechanical integrity, and improve healing with better clinical outcomes over single row rotator cuff repair.

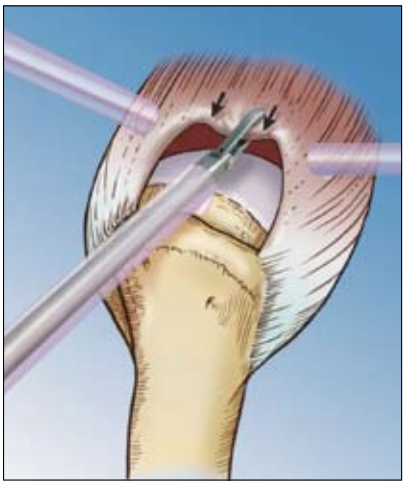
This repair can be completed using the 4.5, 5.5, or 6.5 mm Bio-Corkscrew FT Suture Anchors. The fully threaded design of these suture anchors increases pull-out strength and reduces suture "pull-back" in soft bone by engaging both cortical and cancellous bone.

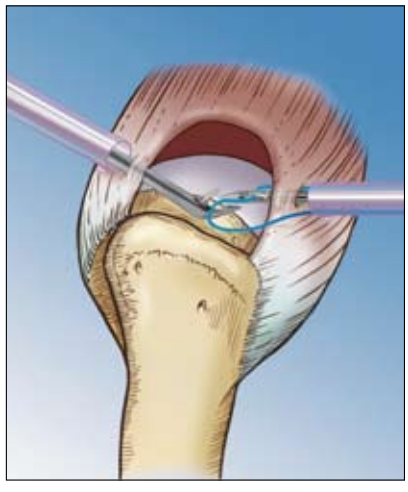


Patient Positioning

The patient may be positioned in the beach chair position using the Beach Chair Lateral Traction Device or in a lateral decubitus position using the 3-Point Shoulder Distraction System. Access to the subacromial space is facilitated with a variety of clear cannulas.

Rotator Cuff Tear Assessment: Margin Convergence Repair





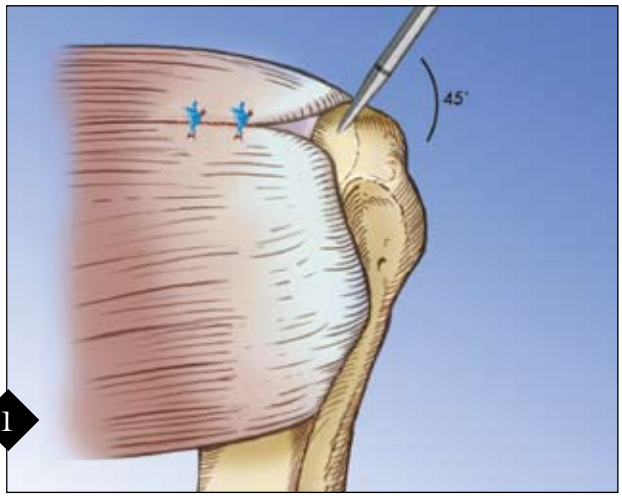
Using a KingFisher™ Suture Retriever/Tissue Grasper or Rotator Cuff Grasper the mobility of the tear is assessed to determine whether a U or L-shaped component exists. In the case of large tears extending to the superior aspect of the glenoid, irrespective of shape, margin convergence suturing is performed in the following manner to reduce volume and strain on the repair:

Via anterior/posterior portal or percutaneous portals consider:

1. BirdBeak® to BirdBeak suture hand-off
2. SutureLasso™/FiberStick™ hand-off to BirdBeak/Penetrator™
3. Micro SutureLasso/FiberStick to BirdBeak/Penetrator hand-off
4. Scorpion™ Suture Passer

Soft tissue releases may be necessary in massive rotator cuff tears. These releases can be performed using Tissue Elevators or straight/curved arthroscopic scissors. Refer to DVD-1069 - Complex Arthroscopic Rotator Cuff Repairs

Double Row Rotator Cuff Repair



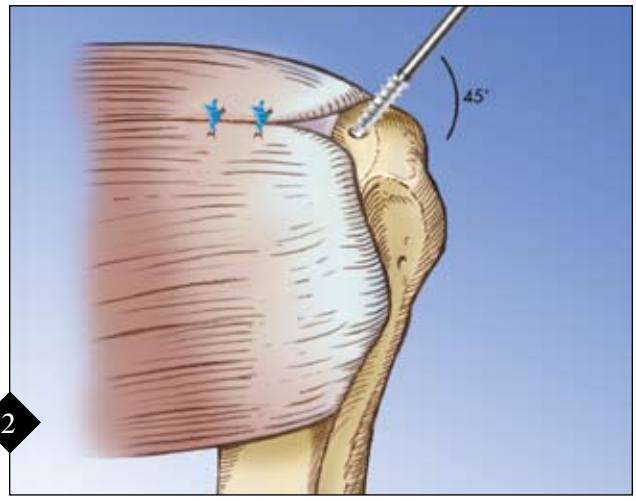
1

Medial Row Anchor Placement

After assessing the width of the rotator cuff footprint, the most medial row suture anchors are placed adjacent to the articular margin of the humerus.

Patient age and bone quality determine the selection of 4.5, 5.5 or 6.5 mm anchors to secure the medial row of the rotator cuff repair.

Pilot hole preparation in the 45° "deadman" angle with the Bio-Corkscrew FT Punch and optional Tap will assist in determining the most suitable anchor. Generally the harder the bone the smaller size anchor that may be used.



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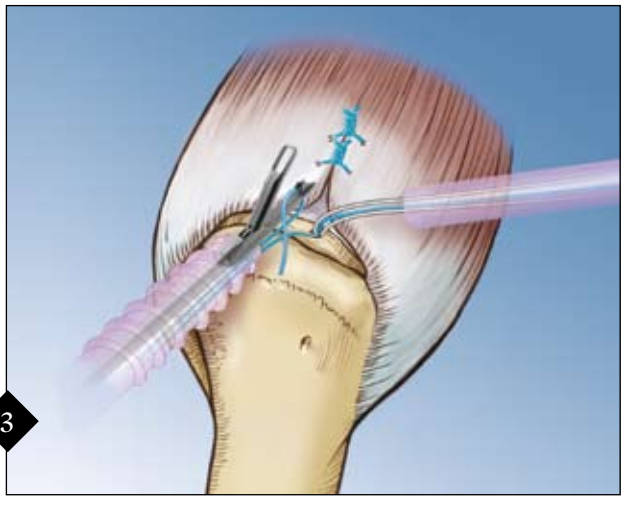
Anchors are placed to assure full contact of the detached tendon along the medial footprint of the greater tuberosity.



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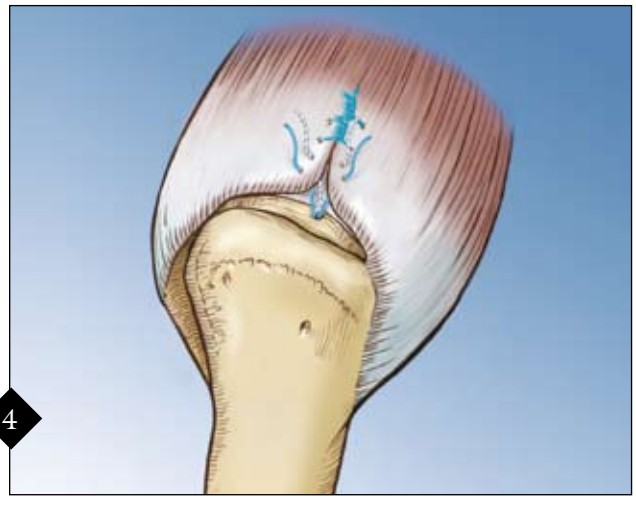
Medial Row Suture Passing

With smaller tears, the sutures of the medial anchor may be passed and tied in horizontal mattress configuration through the anterior and posterior portion of the tear.

The modified Neviaser portal and other medially based percutaneous portals are considered to pass horizontal mattress sutures just lateral to the musculotendinous junction of the tendon using a Banana SutureLasso, Micro SutureLasso, Banana BirdBeak Evolution or Penetrator for the medial row.

The Scorpion or NeedlePunch II Suture Passers may be used from the lateral portal and will provide the following depth of suture passage through the tissue:

Scorpion, 16 or 20 mm
NeedlePunch II, 10 or 16 mm



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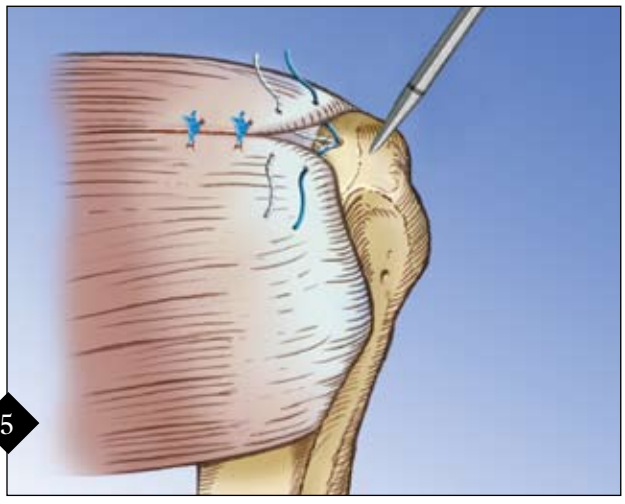
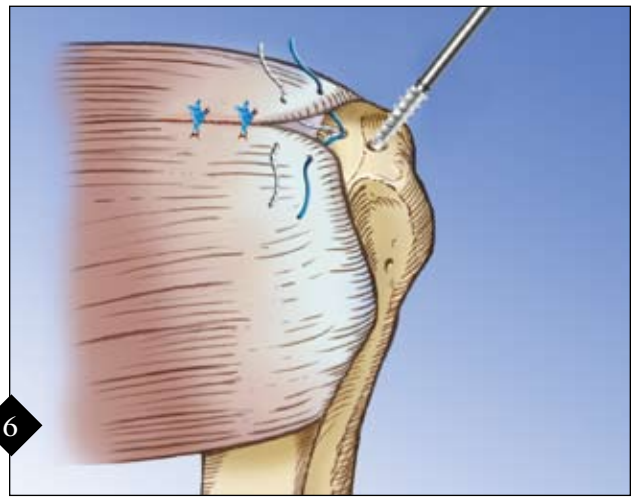
Note: Sutures passed through the medial row are preferably stored and tied after the lateral row is completed and the cuff is tensioned to the lateral margin of the footprint.

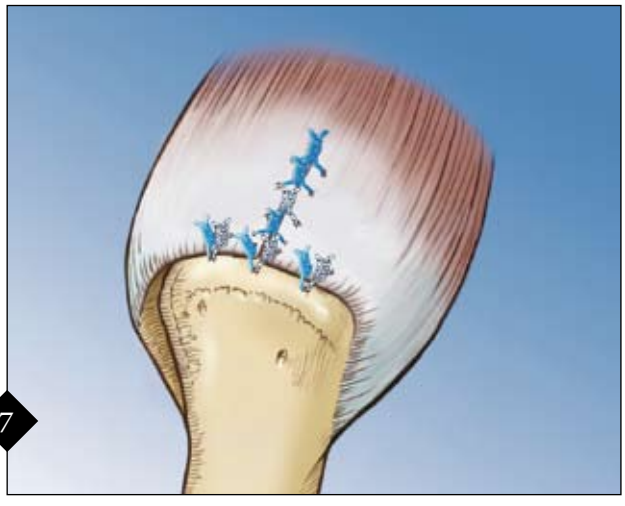


Lateral Row Anchor Placement

Using the 45° "deadman" angle for optimal anchor insertion, pilot hole preparation for the Bio-Corkscrew FT 4.5, 5.5 mm or 6.5 mm is carried out at the far lateral portion of the rotator cuff footprint and greater tuberosity.



Anchors are placed in a linear fashion from anterior to posterior to assist in organizing sutures. Opposite color FiberWire sutures are alternately passed through tissue and tied in sequence from posterior to anterior.



Lateral Row Suture Passing

Using the lateral portal, vertical mattress sutures are passed 5 mm apart and 10 mm from the tendon edge using primarily the Scorpion Suture Passer or NeedlePunch II.

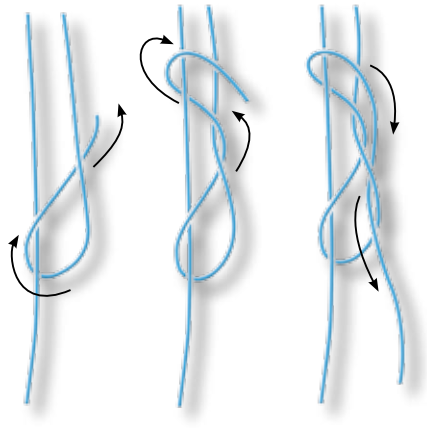
Alternatively, the anterior and posterior portals are used to pass sutures in the lateral tendon edge with a curved SutureLasso.

(*See technique guide/video on the Scorpion, DVD-1074*)

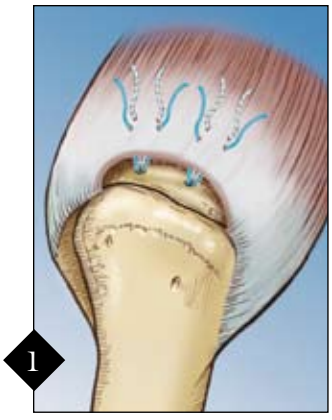
The lateral edge of the tendon is secured to the bone using low profile sliding knots. The medial row sutures are then secured in a similar fashion.

Knot Tying

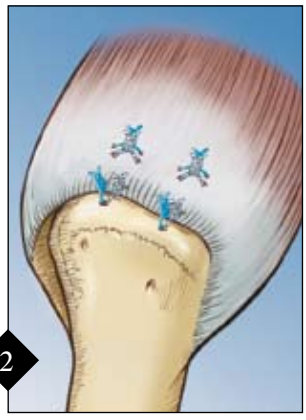
For double row repairs, it is preferred that reduction and securing the repair to the lateral edge of the rotator cuff attachment site is carried out prior to securing the medial based sutures passed in horizontal mattress fashion. The Weston Knot is a low profile sliding knot and is performed as shown below. In the event of sutures not sliding easily in more complex suture passing situations, alternating half-hitches with the 6th Finger or Single-Hole Knot Pusher will yield secure and low profile knots with #2 FiberWire or TigerWire® sutures.



Crescent-Shape Tears

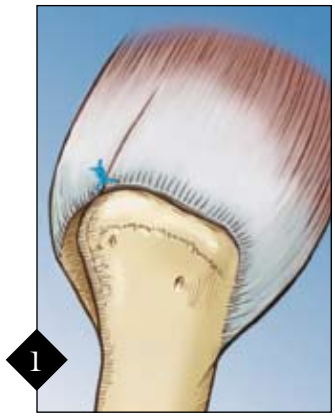


The tear pattern and mobility are assessed (as previously mentioned). Place the required number of medial row anchors, pass the sutures in a mattress stitch configuration and tie the medial row.

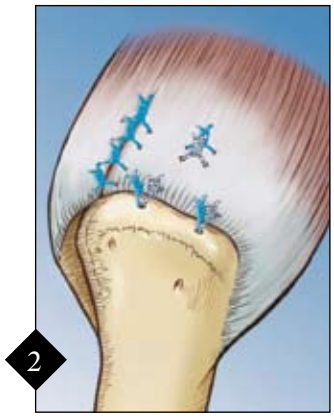


Pass the required number of lateral row anchors, pass the sutures in a simple stitch configuration and tie the lateral row to complete the repair.

L or Reverse L-Shape Tears



The tear pattern and mobility of the tear are assessed (as previously mentioned). The first side-to-side stitch is placed at the lateral edge of the tear, thus may be incorporated within a Bio-Corkscrew FT anchor. Pass the remaining required stitches to complete the margin convergence.



The medial and lateral rows of anchors are placed and sutures passed as previously discussed to complete the repair.

Product Information

Bio-Corkscrew FT, 4.5 x 15 mm, w/two #2 FiberWire	AR-1927BF-45
Bio-Corkscrew FT, 4.5 mm Combo Punch/Tap	AR-1920PB-45
Bio-Corkscrew Cutting Punch, 5 mm	AR-1920CPB
Bio-Corkscrew FT, 5.5 mm x 15 mm, w/two #2 FiberWire	AR-1927BF
Bio-Corkscrew FT, 5.5 mm x 15 mm, w/two #2 FiberWire & Needles	AR-1927BNF
Bio-Corkscrew FT, 5.5 mm x 15 mm, w/two #2 TigerTail	AR-1927BFT
Bio-Corkscrew FT w/two NeedlePunch Needles, 5.5 mm x 15 mm, w/two #2 FiberWire	AR-1927BNP
Bio-Corkscrew FT w/four NeedlePunch Needles, 5.5 mm x 15 mm, w/two #2 FiberWire	AR-1927BNP4
Bio-Corkscrew FT Punch	AR-1927BP
Bio-Corkscrew FT Punch, disposable	AR-1927PBS
Punch/Tap for 5.5 mm Bio-Corkscrew FT	AR-1927CTB
Bio-Corkscrew FT, 6.5 mm x 15 mm, w/two #2 FiberWire	AR-1927BF-65
Instrumentation for Suture Passing:	
Scorpion Suture Passer, 16 mm	AR-13990
Scorpion Suture Passer, 20 mm	AR-13992
Humpback Scorpion Suture Passer, 16 mm	AR-13993
Scorpion Needle	AR-13990N
NeedlePunch II, 10 mm	AR-13981S
NeedlePunch II, 16 mm	AR-13982
Suture Shuttle (for NeedlePunch II)	AR-7224
BirdBeak Evolution, 15° up curve	AR-11881E
Banana BirdBeak Evolution, 22° up curve	AR-11892E
Penetrator Suture Retriever, straight	AR-2167ST
Banana SutureLasso	AR-4065B
Micro SutureLasso	AR-8702
KingFisher Suture Retriever/Tissue Grasper	AR-13970SR
Rotator Cuff Grasper	AR-13960
Crystal Cannula, 5.75 mm I.D. x 7 cm	AR-6560
Media:	
Complex Arthroscopic Rotator Cuff Repairs	DVD-1069
Arthroscopic Rotator Cuff Repair featuring the Scorpion Suture Passer	DVD-1074

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