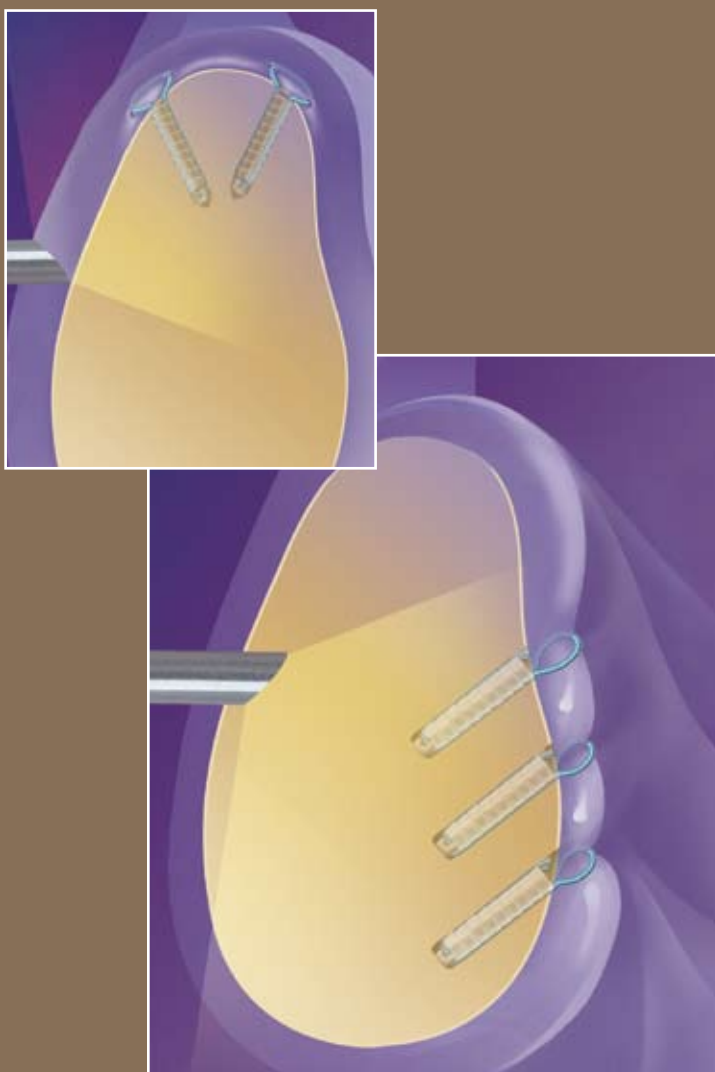




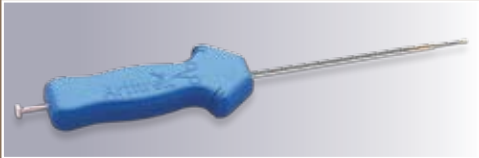
PushLock® Knotless Anchor for Bankart & SLAP Repair

Surgical Technique



# PushLock Bankart & SLAP Repair

# PushLock Bankart and SLAP Repair



## *Introduction*

The PushLock is a 3.5 mm x 14 mm knotless suture anchor designed for arthroscopic glenohumeral joint instability repair. The anchor provides the ability to independently pass the suture through a desired amount of tissue prior to anchor implantation. This feature allows the surgeon to properly capture the amount of capsule or labrum required by the pathology being treated. The unique two-piece PushLock design allows the surgeon to visualize and adjust tissue tension prior to final implant installation. The anchor is tapped into its final position and the sutures are cut flush.

The body of the anchor is available in a bioabsorbable material, poly(L-lactide)acid (PLLA) and a nonabsorbable thermoplastic material, polyetheretherketone (PEEK). Both are strong, revisable and radiolucent implants, with no MRI artifact. Each version uses a PEEK eyelet for superior strength during insertion to allow firm tissue tensioning and shifting.

This guide will provide a stepwise approach to use the PushLock for Bankart and SLAP Repairs.

## *Patient Positioning*

Patient positioning using the Beach Chair Lateral Traction Device or the Lateral Decubitus 3-Point Shoulder Distraction System allows for reliable joint distraction.

## *Bankart Surgical Technique*

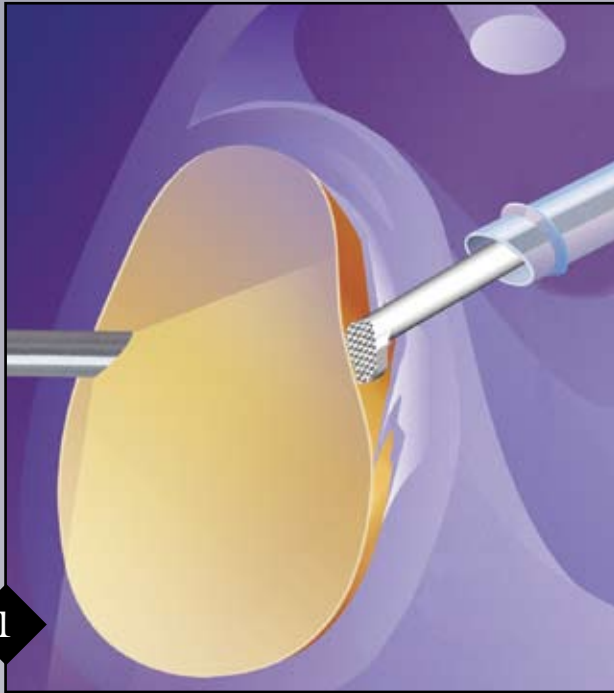
### **Portal Placement:**

Posterior Viewing Portal: Located approximately 2 cm inferior and 1 cm medial to the posterolateral corner of the acromion at the “soft” spot.

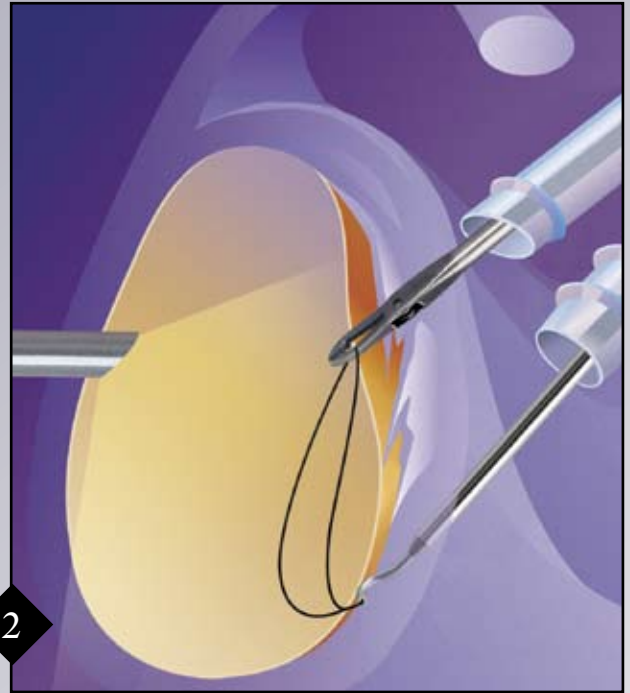
Anterosuperior Portal: Located through the superior margin of the rotator interval. This portal will be used for suture management. Insert a 5.75 mm Crystal Cannula®.

Anteroinferior Portal: Located as close as possible to the superior edge of the subscapularis tendon. This portal will be used for anchor placement. Insert a threaded 8.25 mm cannula.

# Bankart Repair

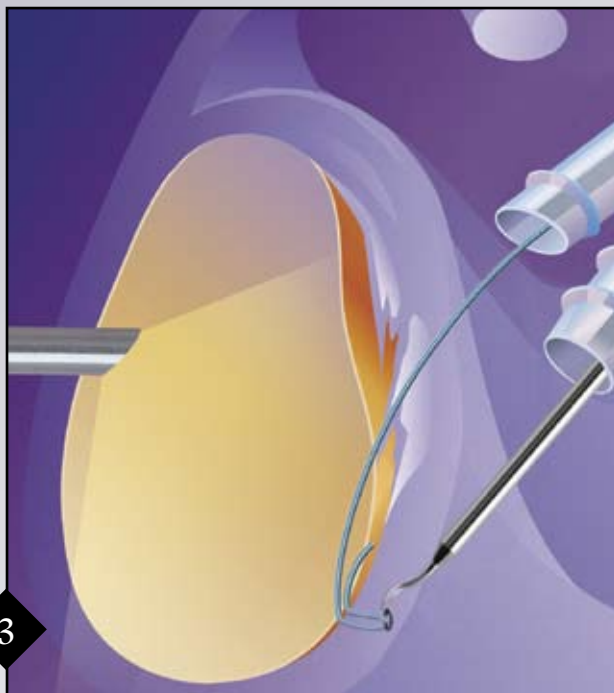


When significant scarring or an ALPSA (anterior labral periosteal sleeve avulsion) lesion is present, use a tissue elevator to mobilize and control the labrum. Create a bleeding bed using a Glenoid Rasp, mechanical shaver or arthroscopic burr to enhance tissue healing to bone.

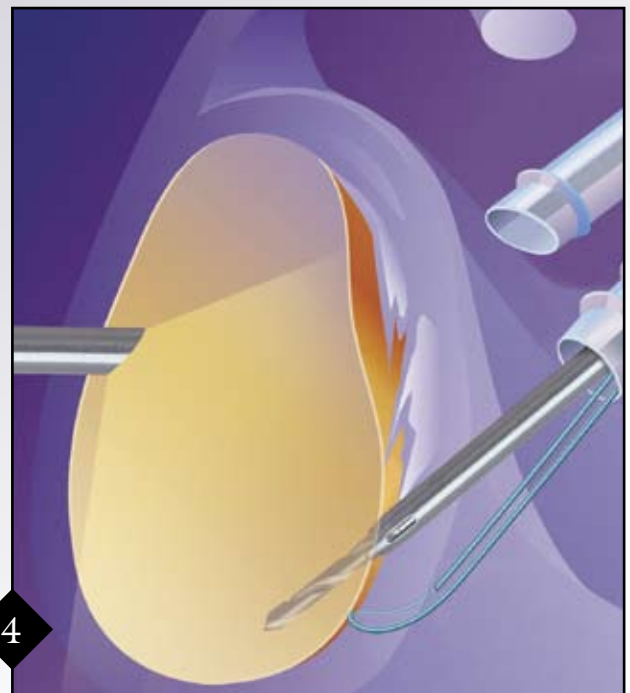


Insert a curved SutureLasso™ SD (right curve for right shoulder) into the anteroinferior cannula and pass it through the capsulolabral tissue inferior to the intended position of the anchor. Advance the Nitinol wire loop into the joint. Retrieve the wire loop using a KingFisher® through the anterosuperior cannula.

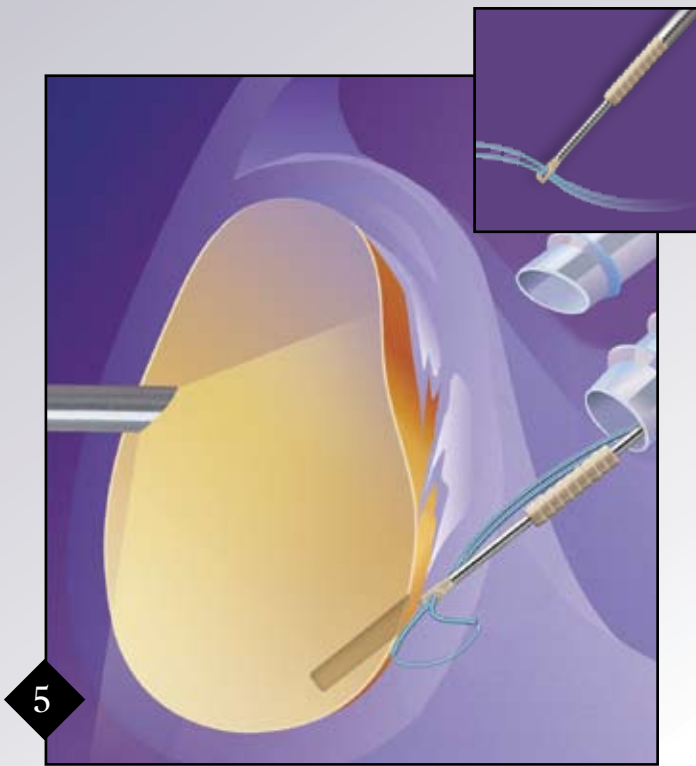
**Surgical Pearl:** The suture shuttling step can be eliminated by using a FiberStick™ instead of the SutureLasso's Nitinol wire loop. The FiberStick is a 50 inch, #2 FiberWire® with 12 inches stiffened. Replace the Nitinol wire loop with a FiberStick and advance it to the tip of the SutureLasso. Pass the SutureLasso through the capsulolabral tissue. Advance the FiberStick and directly retrieve it with a KingFisher through the anterosuperior cannula.



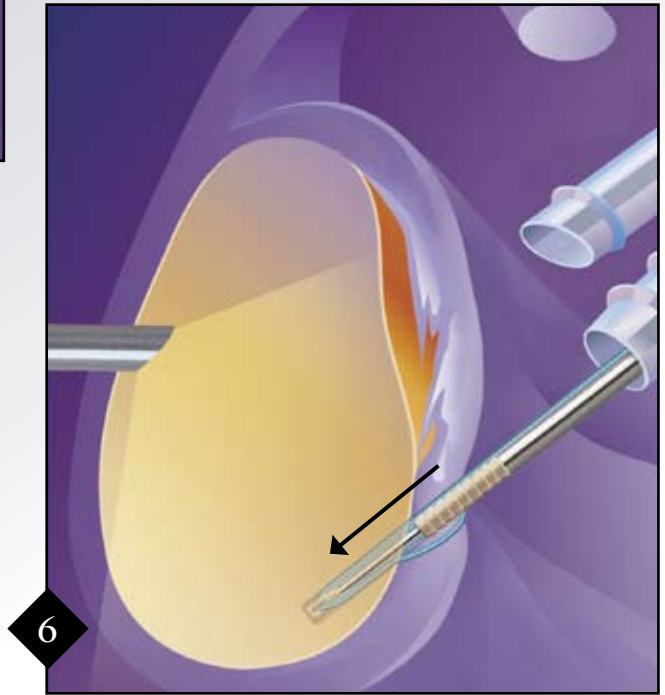
Place 3 to 4 cm of #2 FiberWire suture through the Nitinol wire loop. Retract the wire loop, through the SutureLasso, to pull the FiberWire to the distal end of the SutureLasso inside the joint. Remove the SutureLasso and wire loop together to shuttle the FiberWire through the tissue.



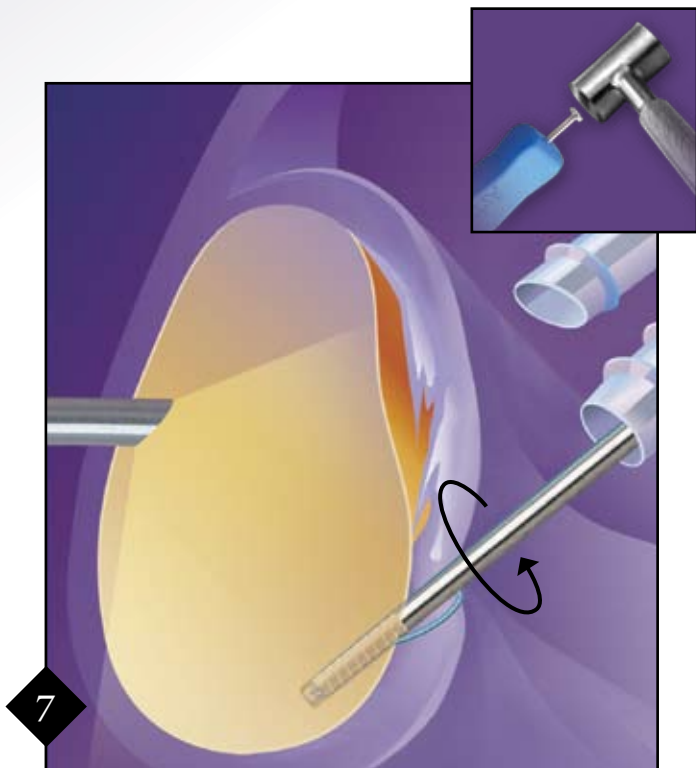
Retrieve both suture tails through the anteroinferior cannula. Pass the spear through the same cannula and place it on the glenoid rim at the desired position (typically 5 o'clock). The spear should be positioned superior to the previously passed FiberWire. The fish-mouth design of the spear allows it to remain securely on the corner of the glenoid. Create a bone socket for the anchor by advancing the step drill until its collar contacts the spear's handle. If desired, a 1.5 mm offset guide can be used to obtain a more medial position onto the face of the glenoid.



5  
Thread the suture tails through the PushLock eyelet. Advance the driver into the joint, while maintaining tension on the suture tails. Tension the sutures to approximate the tissue to the eyelet and then advance both to the bone socket.

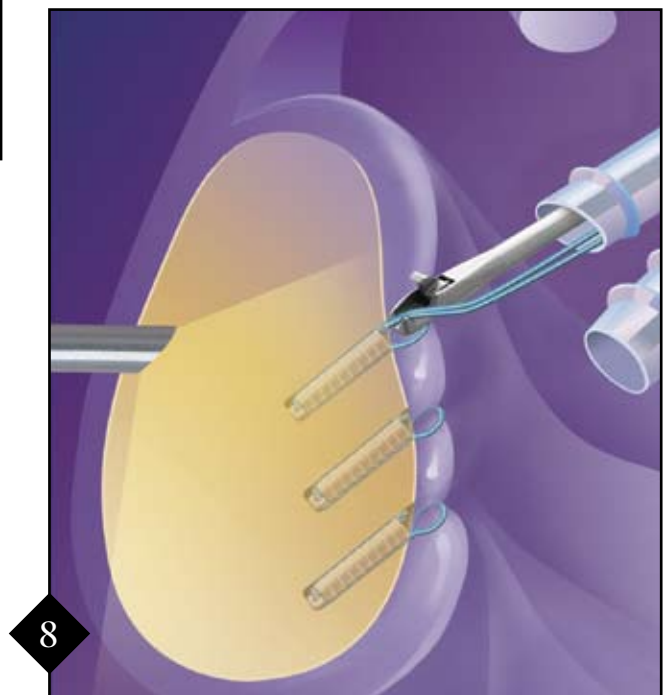


6  
Advance the PushLock into the bone socket, while releasing the suture tails, until the anchor body contacts bone. The labral tissue should be reduced to the glenoid rim. If the reduction is not optimal, back the driver out and correct the tissue tension by adjusting the slack in the suture prior to reinserting the anchor.



7  
Tap the button on the proximal end of the driver handle to advance the anchor body until the second laser line is flush with bone. *Note: that the button on the driver will not be flush with the back of the handle when the implant is fully seated.*

Remove the driver from the anchor by rotating it counterclockwise for six full revolutions.



8  
Cut the sutures flush using an open-ended FiberWire Suture Cutter to minimize the chance for irritation occasionally seen following arthroscopically placed knots.

Repeat steps 2-8 for each subsequent anchor.

# SLAP Repair

## Portal Placement

### Posterior Viewing Portal:

Location is the same as described for Bankart repair.

### Anterosuperior Portal:

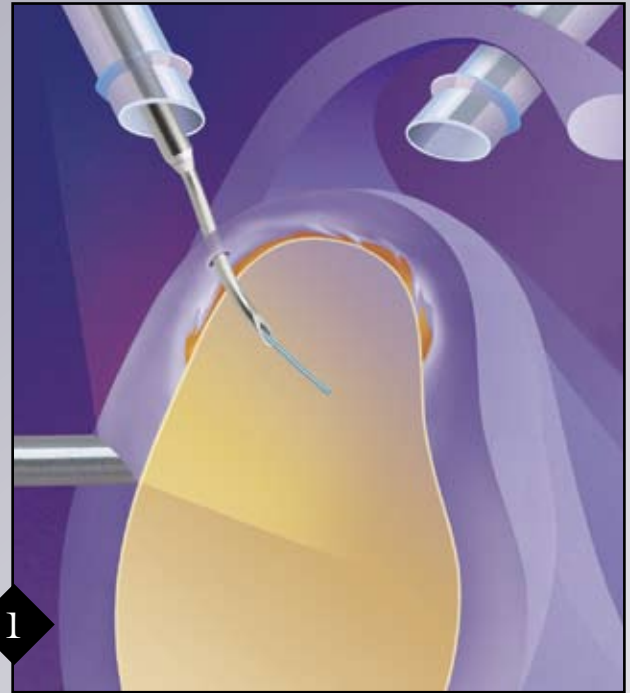
This portal can be used for anchor placement for SLAP lesions with a significant anterior extension and for suture management during repair of posterior SLAP lesions. Insert a 5.75 mm Crystal Cannula.

### Posterosuperior Lateral Acromial Portal (portal of Wilmington):

A SLAP lesion with significant mid glenoid or posterior extension requires a portal located approximately 1 cm lateral and 1 cm to 2 cm anterior of the posterolateral corner of the acromion and penetrates the musculotendinous junction of the supraspinatus tendon. Use a spinal needle to localize the best anchor placement staying as medial as possible. Insert a 5.75 mm Crystal Cannula.

### Anteroinferior Portal:

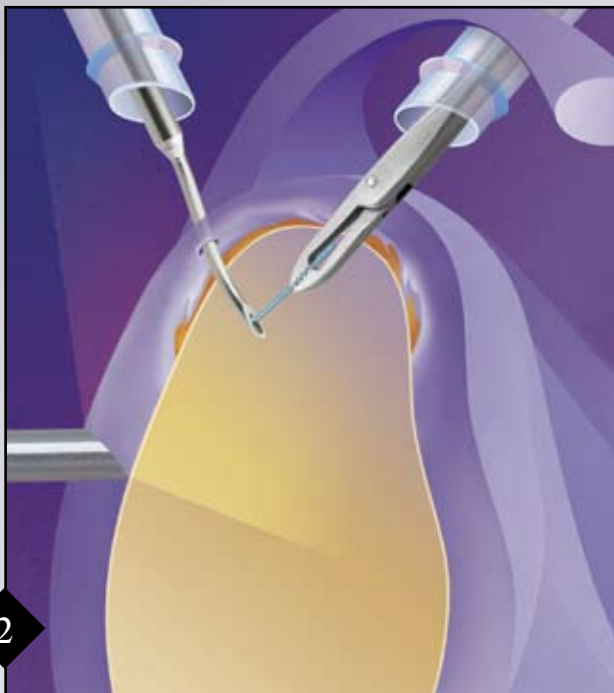
SLAP lesions with significant anterior extension could benefit from this portal for suture management.



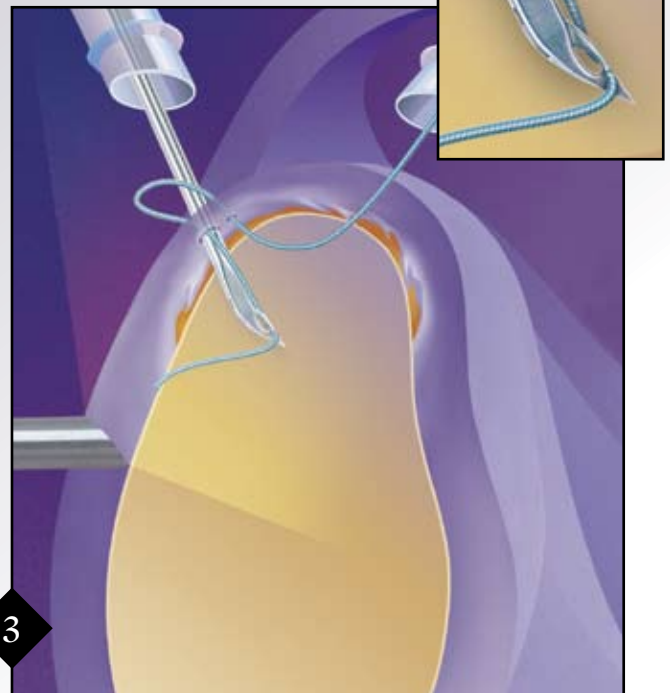
### Posterior anchor placement:

Replace the Nitinol wire loop in a Crescent SutureLasso SD with a FiberStick and advance it to the tip of the SutureLasso SD. Pass the SutureLasso SD through the superior labrum through the posterosuperior lateral acromial portal. Advance the FiberStick into the joint.

Alternatively, load a free FiberWire into the tip of a BirdBeak® or SutureSnare™ and pass it directly through the labrum.



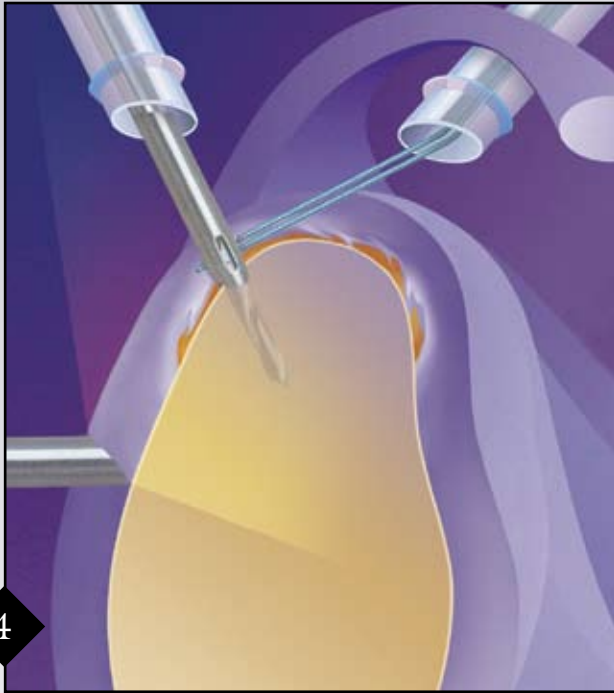
Use a KingFisher to retrieve the FiberStick through the anterosuperior portal.



Use the BirdBeak or SutureSnare to pass the other end of the FiberStick (located in the posterosuperior lateral acromial portal) through the labrum. Make sure that the suture is captured in the jaws of the BirdBeak.

Keep the passes about 7-10 mm apart and form a horizontal mattress stitch. Retrieve the passed suture through the anterosuperior portal.

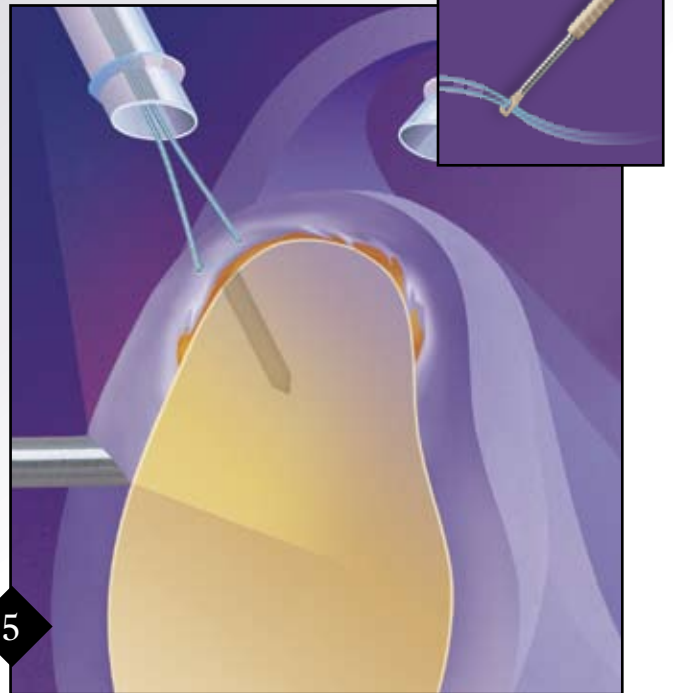
Alternatively a single vertical mattress suture may be used.



4

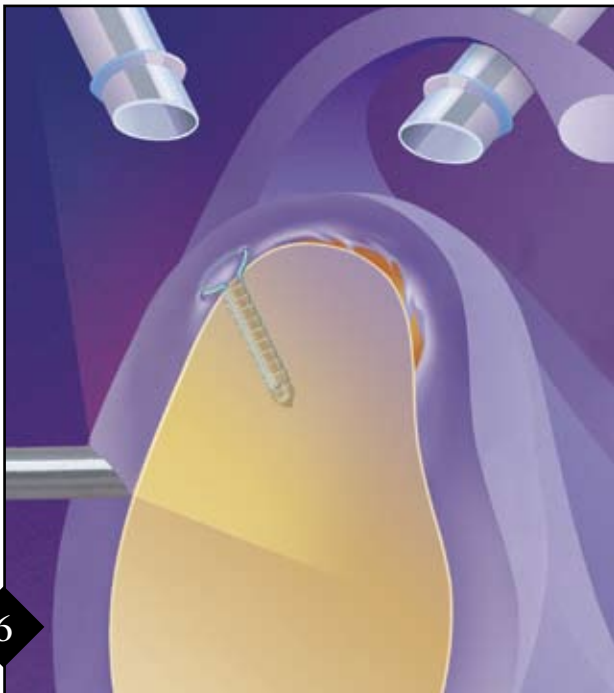
Pass the spear through the posterosuperior lateral acromial portal and place it on the glenoid rim. The fish-mouth design of the spear allows it to remain securely on the glenoid surface. Create a bone socket for the anchor by advancing the step drill through the spear until its collar contacts the spear's handle. Remove the drill and spear.

If desired, a 1.5 mm offset guide can be used to obtain a more medial position onto the face of the glenoid.



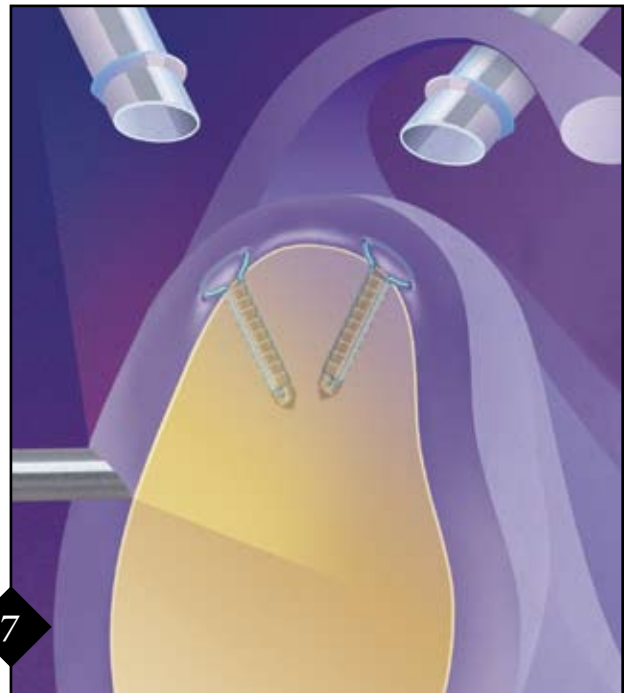
5

Retrieve the FiberWire tails through the posterosuperior lateral acromial portal and thread them through the distal eyelet of the PushLock.



6

Tension and advance the anchor into the bone socket as previously described in the Bankart surgical technique.



7

Anterior anchor placement is similarly achieved.

### *Implants*

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Bio-PushLock, 3.5 mm x 14 mm	AR-1926B
PEEK PushLock, 3.5 mm x 14 mm	AR-1926PS
#2 FiberWire, 38 inches (blue)	AR-7233
FiberStick, #2 FiberWire, 50 inches (blue)	AR-7209
TigerStick, #2 FiberWire, 50 inches (white/black)	AR-7209T
FiberLink, #2 FiberWire w/1.5 inch loop (blue)	AR-7235

### *Accessory Instruments*

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Bio-SutureTak™ Spear, 3.7 mm, reusable	AR-1907
Drill, for 3.5 mm PushLock	AR-1910
Drill, hard bone, for 3.5 mm PushLock, large diameter	AR-1912
Spade Tip Drill, for 3.5 mm PushLock	AR-1911
Metal Offset Guide, large, reusable	AR-1909R
KingFisher Suture Retriever/Tissue Grasper	AR-13970SR
BirdBeak, straight	AR-11880
BirdBeak, 45° up tip	AR-11800
BirdBeak, 22° up tip	AR-11890
Suture Cutter, open ended, left notch	AR-11794L

### *Disposables*

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SutureLasso SD, 90° straight	AR-4068-90
SutureLasso SD, 25° tight curve right	AR-4068-25TR
SutureLasso SD, 25° tight curve left	AR-4068-25TL
SutureLasso SD, 45° curve right	AR-4068-45R
SutureLasso SD, 45° curve left	AR-4068-45L
SutureLasso SD, 90° curve right	AR-4068-90R
SutureLasso SD, 90° curve left	AR-4068-90L
Crescent SutureLasso SD	AR-4068C
PushLock Disposables Kit w/metal spear & drill	AR-1926DS
Crystal Cannula, 5.75 mm I.D. x 7 cm	AR-6560
Twist-In Cannula, 8.25 mm I.D. x 7 cm	AR-6530

### *Literature*

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New Materials in Sports Medicine (PEEK White Paper) LA0200

U.S. PATENT NOS. 6,074,403; 6,716,234; 6,991,636 and PATENTS PENDING



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