OSTEOCONNECT Mini-Open Latarjet

Using DOUBLE ENDOBUTTON Fixation Device

A shoulder technique guide as described by

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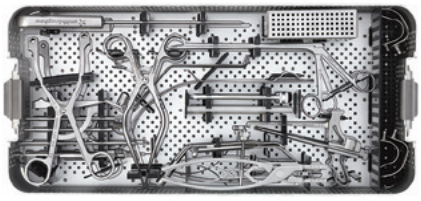

GLENOID BONE LOSS SYSTEMS
Advanced Instability Solutions

DOUBLE ENDOBUTTON◊
Fixation Device

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The following technique guide was prepared under the guidance of Ryan W. Simovitch, MD. Created under close collaboration with the surgeon, it contains a summary of medical techniques and opinions based upon his training and expertise in the field, along with his knowledge of Smith+Nephew's products.

S+N does not provide medical advice and recommends that surgeons exercise their own professional judgement when determining a patient's course of treatment. This guide is presented for educational purposes only. The surgeon is a paid consultant of Smith+Nephew. **Prior to performing this technique, or utilizing any product referenced herein, please conduct a thorough review of each product's indications, contraindications, warnings, precautions and instructions as detailed in the Instructions for Use provided with the individual components.**

Introduction

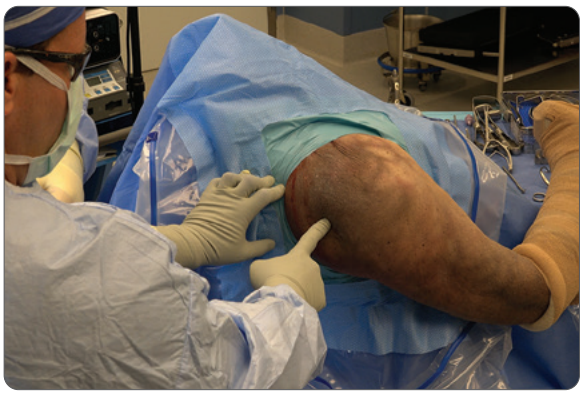
Anterior instability complicated by bone loss or the presence of insufficient soft tissue for arthroscopic primary repair and reconstruction have emphasized the utility of coracoid transfer as described initially by Michel Latarjet.[1] Coracoid transfer is considered to provide excellent results though potential complications associated with screw fixation[2] may give cause for concern to many surgeons considering this technique.[2]

The use of suture buttons for arthroscopic fixation of a coracoid graft has been described by Prof. Pascal Boileau previously.[4] This technique has been demonstrated to be clinically and biomechanically sound.[3, 4]

We present to you a technique of coracoid graft fixation utilizing two suture button constructs vertically oriented to each other through a mini-open. It is able to accomplish the typical 'triple blocking' effect of restoring bone width to the anterior inferior glenoid, producing a sling effect of the conjoint tendon crossing the inferior subscapularis and allowing repair of the labrum and/or capsule.

The use of two vertically oriented suture button constructs allows rotational control of the graft. Also, the use of suture button fixation avoids screws in close proximity to the articular surface, reducing the risk of a screw penetration and inadvertent articulation with the humeral head articular cartilage.[2] A further advantage to the use of suture button fixation is the avoidance of coracoid fracture with compression by the screw head at the time of initial fixation end sentence here and add.[2] Additionally, with the avoidance of screws there is no possibility of screw bending, fatigue and fracture during the healing phase.

This technique requires a standard anterior approach through a subscapularis split but additionally requires percutaneous dissection posteriorly to allow introduction of posterior buttons. Based on author's cadaveric dissection in multiple labs this represents a safe anatomic area that is sufficiently remote from the axillary and suprascapular nerves as well as the suprascapular vessels. As with any technique, it is imperative to follow the appropriate steps to ensure that the posterior dissection and button deployment follow the recommended steps. For example, based on this author's experience, it is critical that the 10-degree offset glenoid guide is positioned flush with the glenoid articular surface in order to avoid excessive medialization of the posterior dissection and button position which could endanger the suprascapular nerve and vessels. Furthermore, it is important to advance the pins beyond the far posterior cortex manually as opposed to under power and to dilate posteriorly in order to avoid unnecessary trauma to the posterior soft tissues.



Patient positioning

General anesthesia with muscle relaxation should be utilized to allow adequate soft tissue retraction during the procedure. A regional interscalene block may be used in addition for perioperative pain management.

The patient is positioned in a modified beach chair position using the T-MAX Beach Chair Positioner with adequate padding of the lower extremities and appropriate neutral position of the neck. The upper support of the T-MAX should be positioned entirely to the contralateral side and the patient should be positioned such that the medial border of the scapula is lateral to the bed support allowing access to the posterior shoulder. Drapes should be affixed to the shoulder allowing access to the deltopectoral approach anteriorly and the mid portion of the scapula posteriorly to ensure adequate posterior access for incisions and shuttling. If an arthroscopic evaluation is to be undertaken prior to the open Latarjet procedure, the head of the bed is elevated to a 70° sitting position. For the open portion of the procedure, the head of the bed can be recessed to approximately 30°. A SPIDER2 Limb Positioner may be used to position the operative arm and facilitate proper extremity placement in slight, 20-30° forward flexion and neutral rotation. Free shoulder rotation should be allowed to facilitate intra-operative adjustment.

Posterior translation of the humerus may facilitate exposure of anterior glenoid, particularly in cases where anterior subluxation is static. This can be provided by an assistant.

A deltopectoral incision is made from the base of the coracoid extending distally for five centimeters obliquely towards the deltoid insertion. Alternatively, an axillary based incision can be made for improved cosmesis. The incision is carried through the deltopectoral interval with mobilization of the cephalic vein.

Subdeltoid and subacromial adhesions are released bluntly. The lateral border of the conjoined tendon and muscle belly is exposed and the clavipectoral fascia is incised in line and along this border. Blunt dissection beneath the conjoined tendon allows identification, palpation and protection of the axillary nerve. Proximally the coracoid, pectoralis minor tendon insertion and CA ligament are exposed.

A superior Mini Hohman retractor can be placed on the dorsal side of the coracoid just anterior to the coracoclavicular ligaments which can be palpated and should be protected, allowing clear visualization of the osteotomy site. The arm can be positioned in slight flexion, abduction and external rotation to aid in exposure.

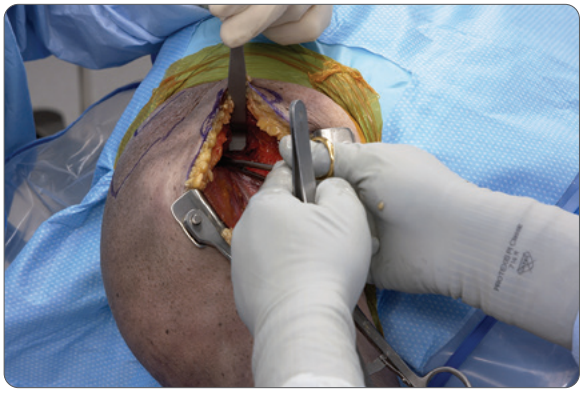


Figure 1

Figure 2

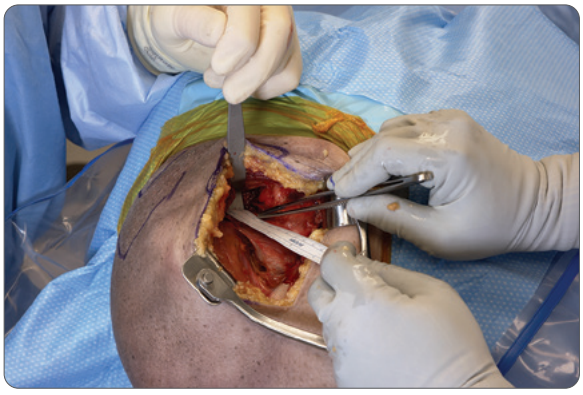


Figure 3

Surgical technique

Transection of the C-A ligament

The coracoacromial ligament is identified and transected leaving a 5-10mm stump on the coracoid for later use in capsular reconstruction if indicated (**Figure 1**).

Identification and release of pec minor

The pectoralis minor tendon insertion is identified and tenotomized sharply off the medial border of the coracoid in a sub-periosteal fashion using electrocautery. Further medial dissection can be performed using a Cobb elevator. Blunt finger dissection allows palpation of the base of the coracoid and scapula (**Figure 2**).

Graft length measurement

After coracoid process exposure, the base of the coracoid can be palpated below the conjoined tendon from the lateral aspect of the coracoid. On the superior surface, a ruler is used to measure the length of the coracoid and assure a minimum graft length of 20mm. A mark is placed to identify the minimal level of osteotomy (**Figure 3**).

NOTE: The images in this guide show a larger incision to help appreciate the technique.

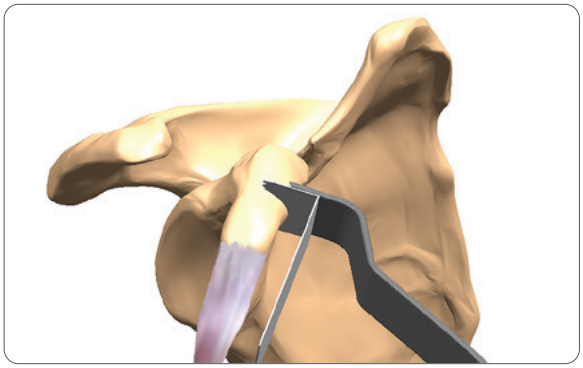


Figure 4

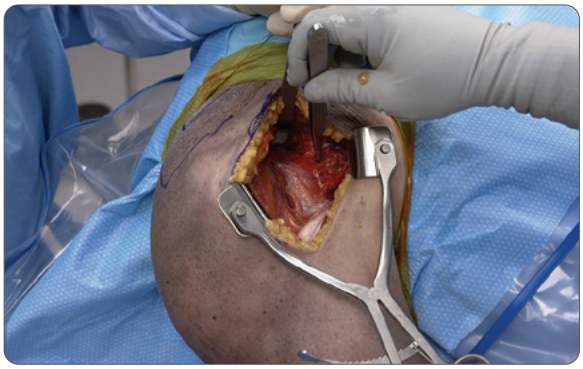


Figure 5

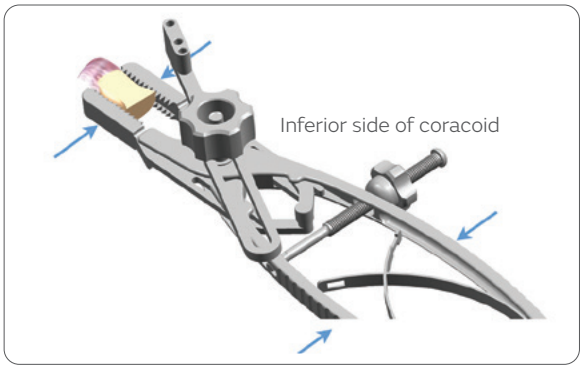


Figure 6a. The inferior side of the coracoid is facing up

Figure 6b

Coracoid osteotomy

The Superior Mini Hohmann retractor can be used to provide medial retraction and protection of the neurovascular structures during osteotomy. Using a 90° sagittal saw or osteotome, 20-25mm of coracoid will be harvested. The osteotomy is carried out in a medial to lateral direction to protect the neurovascular structures or alternatively in a superior to inferior direction as long as a Mini Hohmann retractor is positioned medially against the coracoid to protect adjacent neurovascular structures. If the inferior cortex hinge fails to release a 1- inch osteotome can be used to finish the osteotomy to displace the coracoid at the osteotomy site.

Once the osteotomy is complete, the remaining soft tissue and coracohumeral ligament tissue is dissected and sharply released from the coracoid and distal dissection is carried out to mobilize the conjoined tendon (**Figure 4**).

Identification and protection of neurovascular structures

Care must be taken to identify and protect the musculocutaneous nerve which is generally found within 5cm of the coracoid and coursing from medial to lateral as shown in **Figure 5**. In addition, the axillary nerve can be identified and protected as it traverses below the inferior capsule of the glenohumeral joint. It should be palpated.

Coracoid graft prep and drilling

The Graft Prep Tool can be used to hold and prepare the graft. The inferior side of the coracoid (side now facing superiorly with the coracoid pulled out of the wound) is oriented toward the drill guide stylus and the attachment of the conjoined tendon is seen distally as shown in **Figure 6a**. Soft tissue is removed and a light decortication and planing of the graft is achieved by using a small non aggressive saw or high speed burr as shown in **Figure 6b**. Healthy, bleeding cancellous bone should be exposed, creating a very flat surface to place against the glenoid rim.

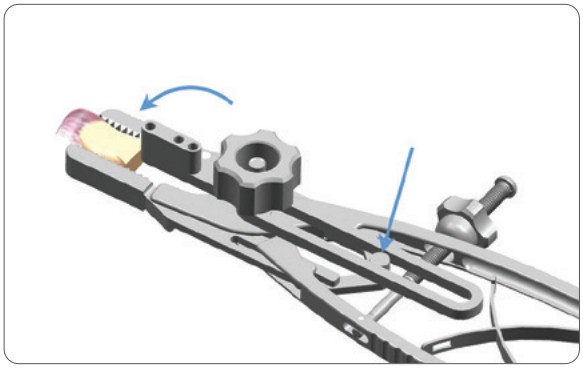


Figure 7

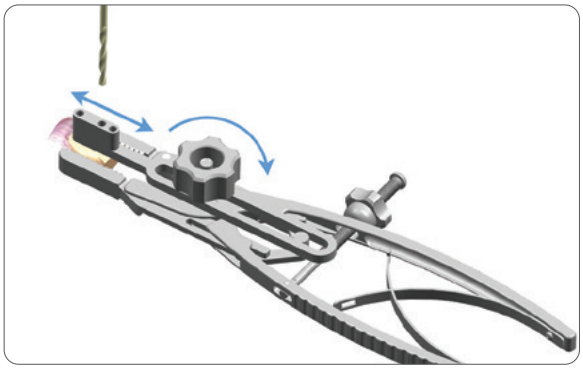


Figure 8

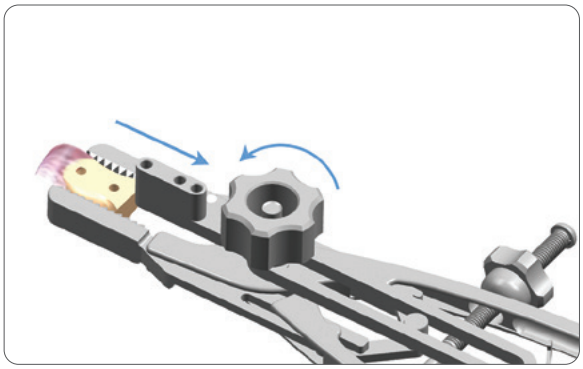


Figure 9

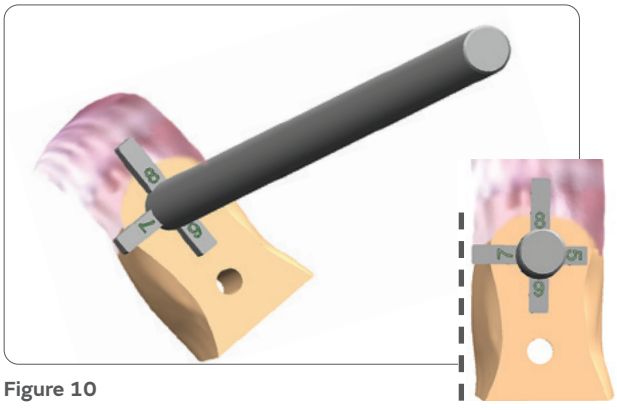


Figure 10

Coracoid graft prep and drilling

Once the cortical bone has been removed, the drill guide stylus can be rotated and aligned to be axially centered to the graft, as shown in **Figure 7**.

An alignment pin near the handles should sit within the opposite side of the drill guide stylus.

The drill guide stylus can slide along the center axis of the coracoid to align the drill holes centered over the graft, as shown in **Figure 8**. Lock the stylus in place by rotating the knob clock-wise. A 2.8mm drill with sleeve in place is used to create 2 holes which are 10mm apart (center-center distance), as shown in **Figures 8 and 9**. Ensure that the drill advances through the graft until the sleeve has also exited the graft. Then remove both the drill and sleeve.

NOTE: Holes may be made 15mm apart in cases with larger coracoid graft.

With the drill still in the second hole, you may find it beneficial to flip the graft over and mark the drill holes with electrocautery. This will make it easier to identify the holes when introducing the Round ENDOBUTTON®.

Inferior hole offset measurement

The Offset Measurement Tool can be used to match the distance of the inferior hole in the coracoid to a corresponding 10-Degree Offset Drill Guide used in a later step. This will ensure flush graft placement on the glenoid. The measurement is made from the center point of the inferior distal hole to the cortical margin of the coracoid which will become flush to the articular edge of the glenoid following coracoid fixation. **Figure 10** would represent the offset for a right shoulder. A left shoulder would be opposite from the shown image. Choosing the appropriate offset is important as a medial graft position may increase the risk of recurrent instability and a position lateral to the articular margin may increase the risk of graft impingement on the humeral articular surface and subsequent arthropathy.[3]

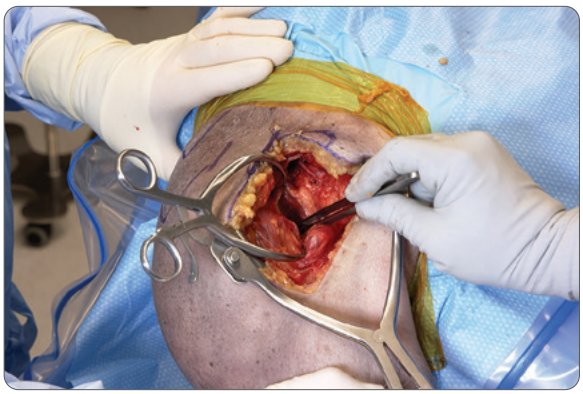


Figure 11

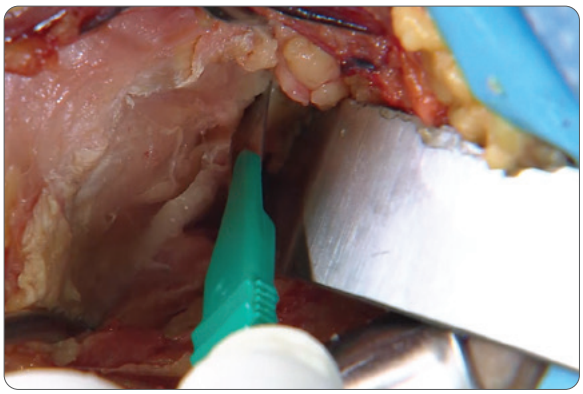


Figure 12

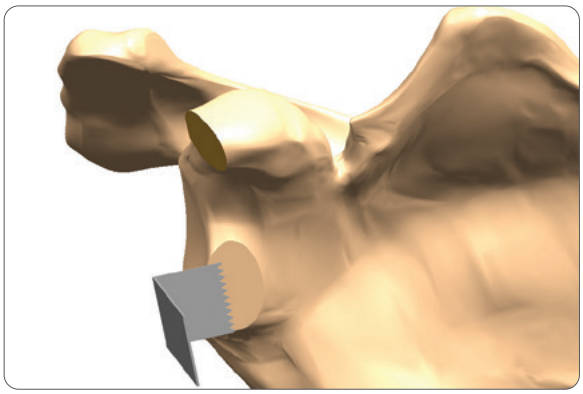


Figure 13

Subscapularis split and horizontal capsulotomy

The superior border of the subscapularis is palpated and the inferior border is defined by the anterior circumflex vessels. A horizontal split of the subscapularis is carried out in the middle of the muscle ('fifty yard line') as shown in **Figure 11**. Begin medially in the muscular portion to facilitate identification of the plane between the capsule and the muscle. A Raytec sponge at the tip of a tonsil hemostat can be used to bluntly to penetrate the subscapularis muscle and elevate the capsule form muscle. Lateral dissection is carried out to allow capsular exposure. Lateral sharp dissection of the subscapularis from the capsule may be required either using an electrocautery or No. 15-blade scalpel.

A vertical or horizontal capsulotomy is made at the glenoid rim and subperiosteal exposure of the glenoid rim is carried out as shown in **Figure 12**. A Fukuda Retractor is placed within the joint to retract the humeral head; an Anterior Glenoid Retractor is placed medially to expose the glenoid neck. A tag suture may be placed in the capsular leaflets for later identification during closure.

Anterior glenoid preparation

A 90˚ sagittal saw or burr can be used to prepare the flat surface of the anterior glenoid where the graft will be placed as shown in **Figure 13**. Healthy, bleeding cancellous bone should be exposed.

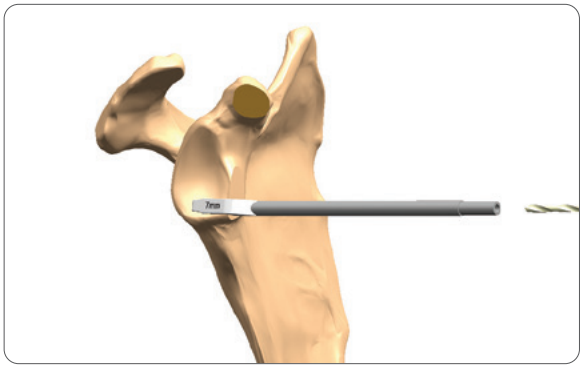


Figure 14

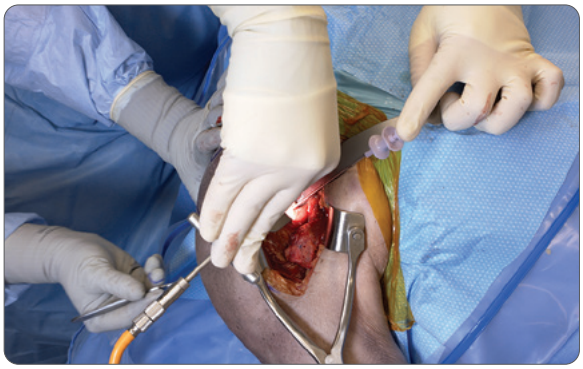


Figure 15

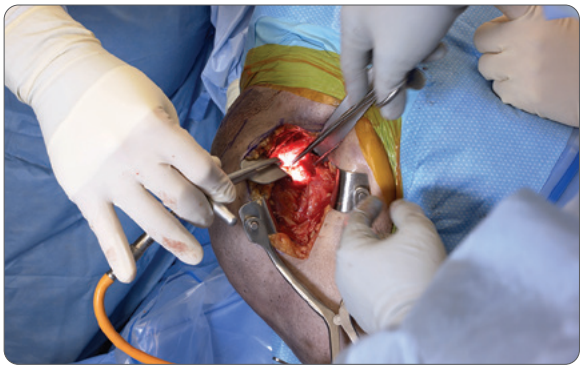


Figure 16

Figure 17

Glenoid drilling – inferior hole

A 2.8mm drill with sleeve can be used with the corresponding 10-Degree Offset Drill Guide (**Figure 14**) selected from the measurement taken off the inferior hole in the coracoid as shown in **Figure 10**. This will ensure that the inferior aspect of the graft is placed flush or slightly medial to the articular surface of the glenoid. The spade of the drill guide is placed flush on the glenoid to orient the drill hole at a 10° divergent angle from the glenoid articular surface. The inferior drill hole is generally placed at the approximate 4:30 clock face position on the glenoid face (right shoulder).

The drill is advanced slowly until it penetrates the far (posterior) cortex of the glenoid. When the drill has passed through the bone, the drill is removed while the cannulated sleeve stays in place. A Suture Retriever is then passed through the sleeve from anterior to posterior and used to advance the sleeve through the posterior soft tissue structures (**Figure 15**), using a blade to create an incision posteriorly for the sleeve to exit. The sleeve is advanced until only about 1 ½" remains out of the glenoid anteriorly, and then the Suture Retriever is removed.

Graft placement

Replace the drill into the inferior drill sleeve, but from posterior to anterior so that the sharp tip protrudes anteriorly. The inferior hole in the graft is then placed over the drill tip and drill sleeve on the anterior of the glenoid and advanced to the rim of the glenoid (**Figure 16**). The drill sleeve should remain a little over an inch above the graft. This will help maintain position of the graft while the superior drill hole in the glenoid is made. A coracoid grasper can help facilitate control of the graft to keep it in place.

Graft alignment

Rotate the graft around the inferior drill sleeve to adjust for flush placement of the superior portion relative to the native glenoid articular surface as shown in **Figure 17**. Palpate the graft and glenoid surface for confirmation of proper alignment.

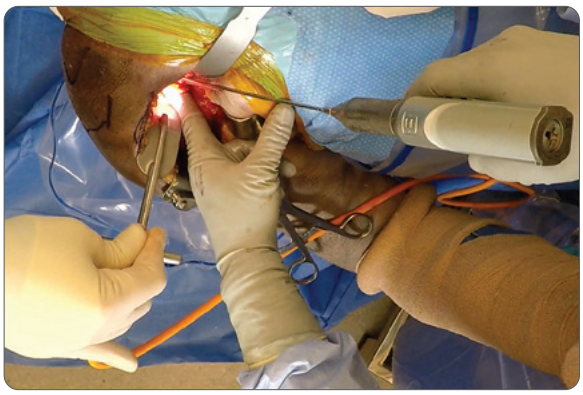


Figure 18

Figure 19

Figure 20

Superior hole drilling

Once the graft is in the correct rotational alignment, the superior hole can be drilled in the glenoid. The graft is held in place manually and the inferior drill sleeve is used as a visual indication of the trajectory needed for parallel button placement (you'll want approximately 1-2" protruding for a visual guide). The pre-prepared superior coracoid hole is used as a drill guide for a 2.8mm drill and sleeve to prepare the superior hole in the glenoid as shown in **Figure 18**. A coracoid grasper can help facilitate control of the graft while drilling the superior hole.

Once the drill has passed through the posterior glenoid bone, the drill is removed. A Suture Retriever is then passed through the sleeve and is used to advance both the suture retriever and drill sleeve through the posterior soft tissue in similar fashion as was done for the inferior hole drilling. A blade is used to create an incision for it to exit posteriorly where the skin is tented.

Posterior soft tissue dilation

From the posterior skin incisions, the cannulated Coracoid Drill Guide is used in this technique to create a clear path for the Round ENDOBUTTON◊ to pass to the glenoid neck. It is passed over the inferior Drill Sleeve first (**Figure 19**) and then used to create a dilated path by deploying it about half way while withdrawing through the soft tissue. The guide can be inserted several times and deployed half way to expand the tines and dilate the soft tissue adequately.

Repeat this process superiorly by passing the Coracoid Drill Guide over superior drill sleeve, then partially deploying it about half way while withdrawing through the soft tissue again repeating this several times for adequate soft tissue dilation.

NOTE: For tougher tissue, the Subscapularis Splitter may be used, inserting it along the Drill sleeve and opening as it is retracted, similar to the method described above for the Coracoid Drill Guide and shown in **Figure 20**.

Capsule and labral repair anchor placement

Capsule and labral repair can be performed at the surgeon's discretion. Anchors may be placed along the rim of the glenoid for primary capsule repair and placement of the graft in an extra-articular position. Q-FIX◊, MICRORAPTOR◊ KNOTLESS or MICRORAPTOR REGENESORB◊ can be utilized for this portion of the technique. (Alternatively, sutures may be used to close the capsule at the end of the procedure, in which case no anchors are placed at this time.) Anchors are drilled and placed while the drill sleeves are still in place to ensure there is no tunnel convergence.

Figure 21

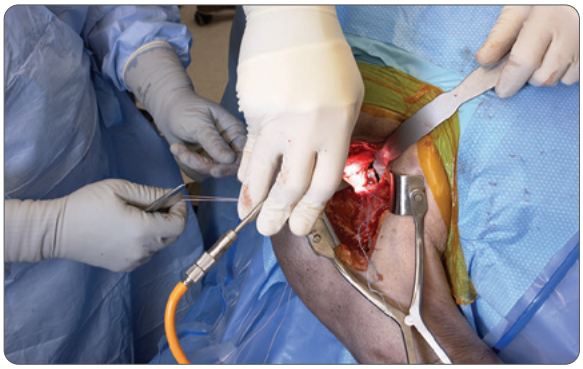


Figure 22

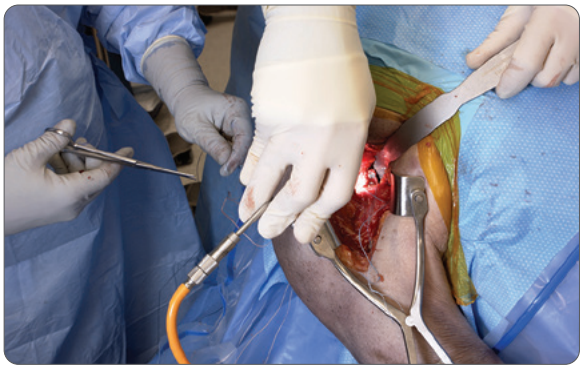


Figure 23

Figure 24

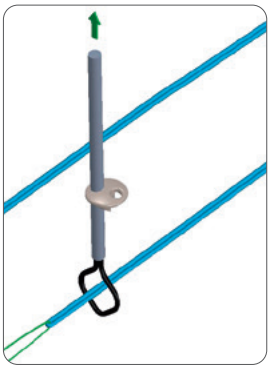


Figure 25

Implant introduction

Use a suture retriever to thread a monofilament through each drill sleeve such that the loop end of a monofilament exits anteriorly through the drill sleeve. Secure the monofilaments in place, then remove the drill sleeves using a pin puller threaded over the monofilament. Tie the cobraid on the posterior of the Round ENDOBUTTON◊ implant (the one securing the two white suture loops together) to the anterior end of monofilament in the inferior hole, and introduce the implant through the graft and glenoid by pulling the monofilament out posteriorly in a retrograde fashion. The nub of the anterior button should rest securely in the graft, and the white sutures should be pulled all the way through the posterior incision (**Figure 21**).

Next, tie the cobraid from the white sutures on the posterior aspect of the second round ENDOBUTTON implant (superior one) to the anterior end of the monofilament in the superior hole, and introduce the implant through the graft and glenoid pulling the white suture posteriorly through the superior incision by pulling the monofilament in a retrograde direction.

Inferior posterior button placement

Take one loop of the white suture from the inferior buttons in each hand, and alternately pull on each loop to ensure the white suture can smoothly glide through the repair (**Figure 22**). Keeping a loop in each hand, stretch the cobraid attaching them until it's taught and cut in the middle (**Figure 23**), leaving a length of cobraid on each white suture loop. Place a suture retriever through a hole in a 2-hole Round ENDOBUTTON with the convex side facing towards the handle of the suture retriever (facing away from patient's shoulder), and retrieve the cobraid through the hole, advancing onto the white suture loop (**Figures 24 and 25**). Repeat this process with the other suture loop and the second hole in the button. It is important to follow these steps so that the concave side of the button is opposed to the bone posteriorly.

The Nice Knot technique

The inferior 2-hole round ENDOBUTTON◊ Fixation Device is advanced until it sits flush against the posterior face of the glenoid using a sliding Nice Knot:

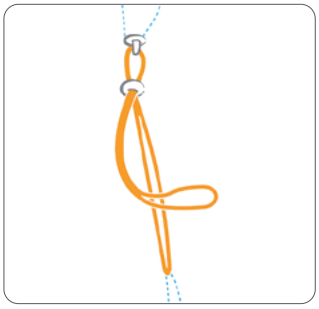


Figure 26

Step 1

The side of the suture that has the cobraid woven in will serve as your post. With the post in your right hand, create a figure four by placing the loop over the post (**Figure 26**).

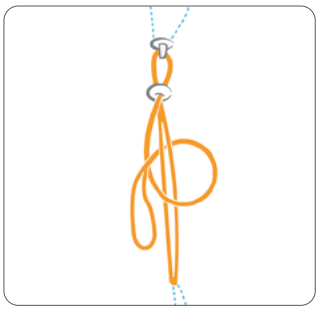


Figure 27

Step 2

Bring the loop underneath the post and through the figure of four. Open the end of the suture loop (**Figure 27**).

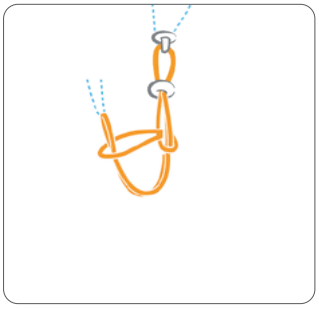


Figure 28

Step 3

Place the post through the open loop created in step 2 (**Figure 28**). Build the knot behind the posterior implant by pulling taught on the loop. Care is taken to ensure that the knot is fully taut by dressing the knot prior to pulling the post and advancing the implant through the incision.

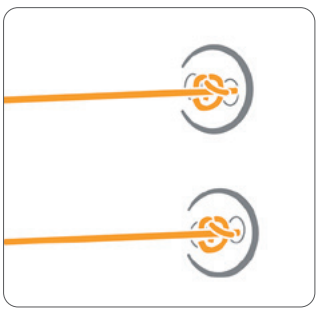


Figure 29

Step 4

Pull the post to advance the Nice Knot to the face of the 2-hole Round ENDOBUTTON Fixation Device and advancing both the knot and implant to the glenoid neck as a unit (**Figure 29**).

A knot pusher may be used to secure the posterior round ENDOBUTTON Fixation Devices. While pulling on the post the knot pusher can be pushed over the post to help deliver the button to the posterior glenoid. The knot pusher will provide tactile feedback when the posterior round ENDOBUTTON Fixation Devices are properly seated.

Superior posterior button placement and Nice Knot

Repeat the above steps on the sutures from the superior Round ENDOBUTTON, placing a posterior 2-hole Round ENDOBUTTON and securing with a Nice Knot.

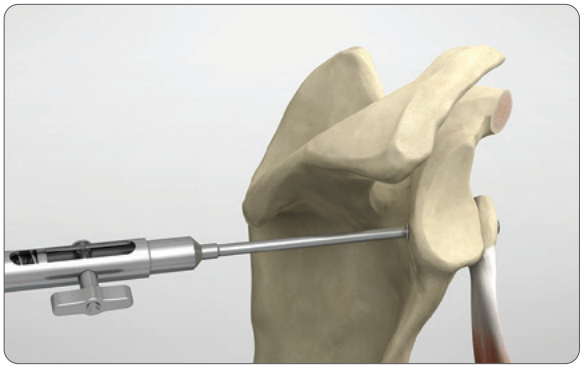


Figure 30

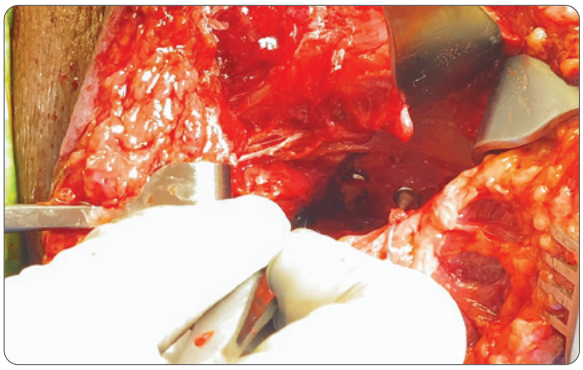


Figure 31

Suture tensioning

Load a suture retriever through the back of the Suture Tensioner, then capture the ends of the cobraid on the inferior implant and pull the sutures into the Suture Tensioner and advance the tip of the tensioner to the glenoid neck (**Figure 30**). Apply an initial compression of 50N. Then release the suture tensioner by pressing the release lever and pulling back.

Load the superior suture loop into the Suture Tensioner in the same way, and apply an initial compression of 50N, leaving the Suture Tensioner in place.

Assess the graft, and make any required adjustments for your flush graft placement. When the graft is in position, tension the superior implant to 100N, release tension and then tension again to 100N (the first tensioning ensures all laxity is removed from the suture, the second tensioning gives your final fixation), then remove the Suture Tensioner, cut the white suture loop and secure the sliding knot in place with three surgeons knots.

Repeat the tensioning process on the inferior implant, and then cut the white sutures and secure in place with three surgeons knots.

Use an arthroscopic suture cutter to trim excess white suture on both implants.

Final soft tissue repairs

Capsule and labral repair can be performed at the surgeon's discretion. If anchors were previously placed, the sutures are passed and tied at this time for primary capsule repair and placement of the graft in an extra-articular position. Alternatively, sutures may be used to close the capsule to the stump of the coracoacromial ligament remaining on the coracoid process. A combination of both of these can also be done.

Posterior dissection

As seen in this cadaveric posterior dissection (**Figure 31**), the posterior buttons sit flush to the glenoid rim. Suprascapular nerve is seen branching to the Infraspinatus but distant from the button positions.

Post operative management

Postoperative rehabilitation is conducted in five phases. A sling is worn for four weeks but can be removed for shower, physical therapy and home exercises.

Phase I encompasses the first 4 weeks after surgery. Initially, elbow, wrist, hand and finger range of motion are started along with pendulums. At one week from surgery, scapular isometric exercises are begun and progressed as tolerated. Passively, forward elevation and abduction in the scapula plane are initiated to tolerance. External rotation is limited to 40°.

Phase II encompasses week 5 through week 8 and focuses on a return of active range of motion. Active assisted range of motion (AAROM) is initiated. Active assisted flexion in a supine position as well as sitting and standing positions are begun. External rotation limit to 40° is lifted and cane-assisted ER is started. AAROM progresses to active range of motion.

Phase III encompasses week 9 through 12 and marks the initiation of strengthening. External and internal rotation band strengthening is performed as well as rows with a resistance band. Stretching continues to restore internal and external rotation. All exercise are submaximal.

Phase IV encompasses week 13-16 and represents advanced strengthening to improve muscle endurance, power, and strength. A combination of theraband, cable column, and dumbbell exercises are progressively advanced. Medicine ball exercises to incorporate trunk rotation with rotator cuff strengthening are incorporated as are plyometrics and rapid theraband drills.

Phase V represents the final phase of rehabilitation after the initial four months of graft healing. It is meant as a transition back to sport. Its focus should be on sports specific programs dependent on the athlete's sport. For example, a throwing program in baseball. Return to sport is allowed once full painless range of motion is achieved without clinical signs of apprehension, impingement or rotator cuff weakness.

DISCLAIMER: Postoperative care is individualized and is determined by the physician based on the patient's symptoms, injury pattern, unique patient anatomy, patient medical history, and individual treatment requirements. Not all patients will have the same surgical procedure or timelines for rehabilitation.

Ordering information

Q-FIX◊ All-Suture Anchor	
Reference #	Description
1.8mm Q-FIX and 1.8mm Q-FIX All-Suture Anchors	
72290123	1.8mm Q-FIX MINI All-Suture Anchor
25-1800	1.8mm Q-FIX All-Suture Anchor
Disposable Kits	
Reference #	Description
72290125	1.8mm Q-FIX MINI Kit, disposable
72290126	1.8mm Q-FIX MINI Kit XL, disposable
25-1810	1.8mm Q-FIX Kit, disposable
25-1811	1.8mm Q-FIX Kit XL, disposable
Reusable Instruments	
Reference #	Description
72290032	1.8mm Q-FIX Drill Guide, reusable
72290034	1.8mm Q-FIX Drill Guide XL, reusable
72290120	1.8mm Q-FIX Curved Drill Guide, reusable
72290119	1.8mm Q-FIX Curved Drill Guide XL, reusable
72290033	1.8mm Q-FIX Obturator, reusable
25-1812	1.8mm Q-FIX PATHFINDER Obturator, reusable
Disposable Accessories	
Reference #	Description
72290030	1.8mm Q-FIX Straight Drill, disposable
72290118	1.8mm Q-FIX Flexible Drill, disposable

MICRORAPTOR◊ REGENESORB◊ Suture Anchor and Compatible Devices	
Reference #	Description
Suture Anchors	
72204983	MICRORAPTOR REGENESORB Suture Anchor with ONE ULTRABRAID◊ #1 Suture (Blue)
72204984	MICRORAPTOR REGENESORB Suture Anchor with ONE ULTRABRAID #1 Suture, cobraid-blue
Drill Guides, Drills and Obturators	
Reference #	Description
72204988	MICRORAPTOR Drill
72205267	MICRORAPTOR Hard Bone Drill, 1.8mm
72204991	MICRORAPTOR Drill Guide, Crown Tip
72204992	MICRORAPTOR Drill Guide, Spike Tip
72204993	MICRORAPTOR Drill Guide, Crown Tip, Curved
72204995	MICRORAPTOR Drill Guide, Fishmouth Tip
72204999	MICRORAPTOR Obturator, Blunt Tip
72205000	MICRORAPTOR Obturator, Blunt Tip, Cannulated
72205001	MICRORAPTOR Obturator, Trocar Tip

MICRORAPTOR KNOTLESS Suture Anchor and Compatibility System	
Reference #	Description
Implants	
72205020	MICRORAPTOR KNOTLESS REGENESORB Suture Anchor
72205021	MICRORAPTOR KNOTLESS Peek Suture Anchor
Drill Guides, Drills and Obturators	
Reference #	Description
72204991	MICRORAPTOR Drill Guide, Crown Tip
72204992	MICRORAPTOR Drill Guide, Spike Tip
72204995	MICRORAPTOR Drill Guide, Fishmouth Tip
72205022	MICRORAPTOR KNOTLESS Drill, 2.2mm
72205169	MICRORAPTOR KNOTLESS Drill, 2.6mm
72204999	MICRORAPTOR Obturator, Blunt Tip
72205000	MICRORAPTOR Obturator, Blunt Tip, Cannulated
72205001	MICRORAPTOR Obturator, Trocar Tip

Ordering information (cont.)

Implants	
Reference #	Description
71934990	2-hole Round ENDOBUTTON◊
71934993	Round ENDOBUTTON S2 ¾ Suture Loop

Specific disposables for implants	
Reference #	Description
71933035	Drill, 2.7mm
013593	Suture Retriever (Box 6)
014771	T-FIX◊ 2.8mm Drill and Sleeve (2)
72201361	ACCU-PASS◊ Suture Shuttle Monofilament #1 (Box 10)

Instrument part list for both mini open and arthroscopically assisted Latarjet – Set Number: 7193R002	
Reference #	Description
71935449	Mini-Open Arthro Assist Latarjet Tray
71935450	Mini-Open Arthro Assist Latarjet Tray Lid
71935456	Innomed® Mini Hohmann Retractor – Inferior
71935455	Innomed Mini Hohmann Retractor – Superior
71935454	Innomed Tissue Retractor – Anterior Glenoid
71935451	Innomed Tissue Retractor Handle – Kolbel Style
71935452	Innomed Tissue Retractor Paddle – Kolbel Style Small
71935453	Innomed Tissue Retractor Paddle – Kolbel Style Large
71935458	Innomed Tissue Retractor – Gelpi Style
71935457	Innomed Fukuda Retractor with Light
71935459	Grasping Tool
71935448	Offset Measurement Tool, 5mm-8mm
71935444	10° Offset Drill Guide, 5mm
71935445	10° Offset Drill Guide, 6mm
71935446	10° Offset Drill Guide, 7mm
71935447	10° Offset Drill Guide, 8mm
71935061	Bone Graft Preparation Tool
014803	ACL Drill Guide Handle
2141	ACMI Light Cable Adapter
72202567	Hex Driver, 2.5mm
71063004	AO Connector

Additional Instruments	
Reference #	Description
71935607	Suture Tensioner
71935615	Coracoid Drilling Guide

Contact OKC Loaner for the Mini-Open Latarjet Instrument Tray

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1. Latarjet M. A propos du traitement des luxations récidivantes de l'épaule. [Treatment of recurrent dislocations of the shoulder]. *Lyon Chir* 1954;49:994-7. **2.** Gupta A, Delaney R, Petkin K, Lafosse L. Complications of the Latarjet Procedure. Curr Rev Musculoskelet Med. 2015 Mar; 8(1):59-66. **3.** Kazum E, etal. Biomechanical evaluation of suture buttons versus cortical screws in the Latarjet-Bristow procedure: a fresh-frozen cadavers study. *Arch Orthop Trauma Surg.* 2019 Dec;139(12):1779-1783. **4.**Boileau P, Saliken D, Gendre P, Seeto BL, d'Ollonne T, Gonzalez JF, Bronsard N. Arthroscopic Latarjet: Suture-Button Fixation Is a Safe and Reliable Alternative to Screw Fixation. *Arthroscopy*. 2019 Apr;35(4):1050-1061.