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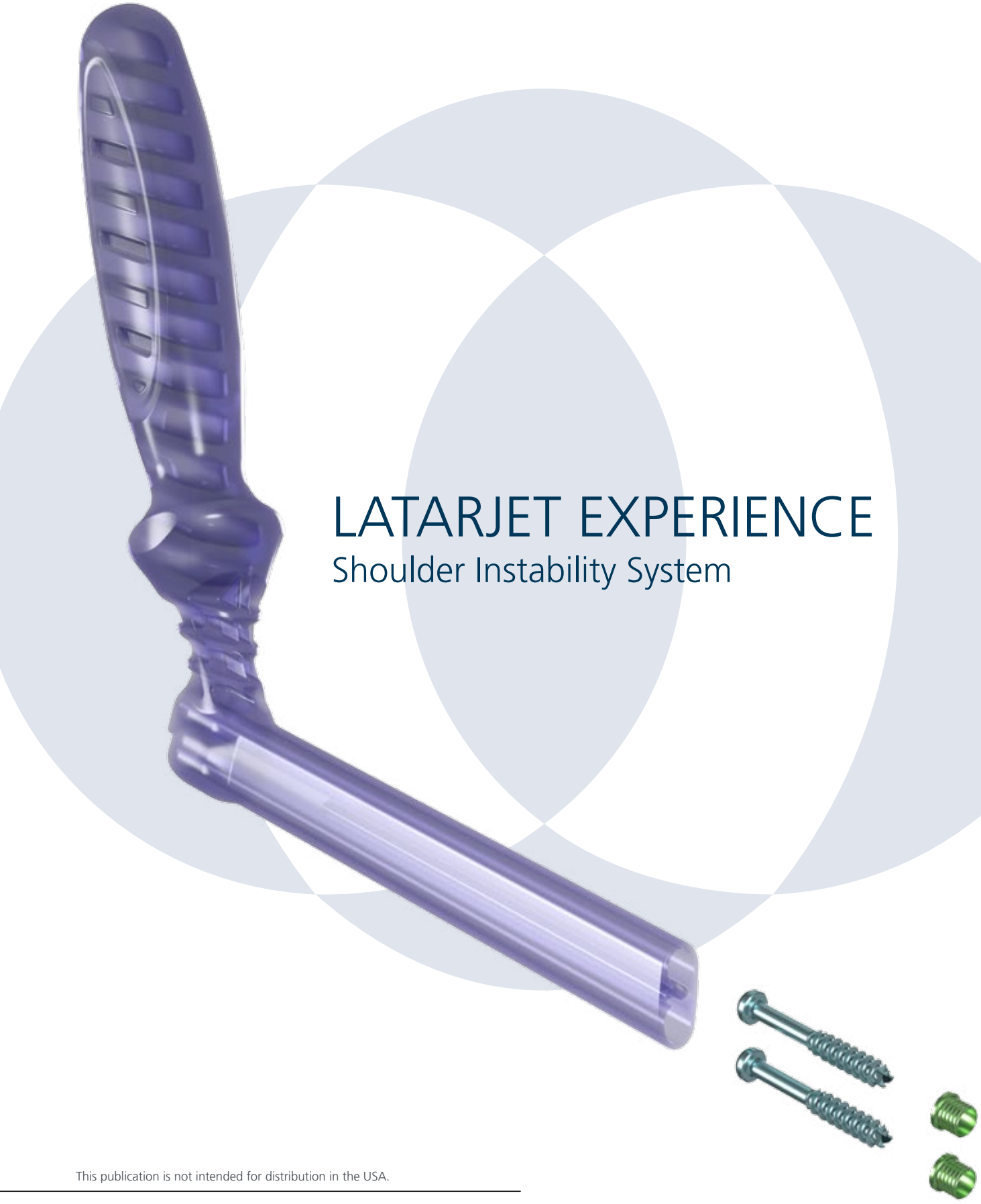

LATARJET EXPERIENCE

Shoulder Instability System

SURGICAL TECHNIQUE

BY LAURENT LAFOSSE

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FOREWORD

Dr Lafosse

This surgical technique guide was written by Dr Laurent Lafosse. Dr Lafosse is an orthopedic surgeon at the Clinique Générale in Annecy and the Clinique Générale Beaulieu in Geneva. He has more than 25 years of experience in shoulder surgery and is a member of different societies such as the SFA (Société Francophone d'Arthorscopie), the SECEC/ESSSE (European Society for Shoulder and Elbow Surgery) and the ASES (American Shoulder and Elbow Society).

After his first arthroscopic LATARJET in December 2003, Dr Lafosse continued to develop surgical steps and a specific instrument which enabled the success of this procedure over the years to reach more than 600 cases.

He has published numerous peer-reviewed articles on shoulder arthroscopy and arthroscopic LATARJET procedures.

This surgery has been confirmed by a group of users who have successfully performed it alongside published clinical evidence of the arthroscopic LATARJET technique.

The goal of the LATARJET EXPERIENCE system is to improve the current arthroscopic technique and enable a better mini-open procedure as the initial choice or as a complement of the arthroscopic technique.

We have to keep in mind that this technique remains challenging and needs adequate training to be performed accurately.

Dr Lafosse and DePuy Synthes Mitek Sports Medicine want to thank all the collaborating surgeons; Prof Emilio Calvo, Dr Jens Agneskirschner, Dr George Athwal, Dr Roman Brozska, Dr Eduard Buess, Dr Avi Chezar, Dr Paul J Favorito, Dr Charles Getz, Dr Patrick Grüninger, Dr Vahid Hamidy, Dr Harri Heliö, Dr Jean Kany, Dr Shwan Koschnau, Dr Pierre Métais, Dr Rober J Meislin, Dr Gabriel Moses, Dr Geoffroy Nourissat, Dr Matt Ravenscroft, Dr Claudio Rosso and Dr David Weinstein, who contributed to the success of the LATARJET EXPERIENCE.

Dr Lafosse

WHY A LATARJET PROCEDURE?

In 1954, Dr. M Latarjet[1] described his technique of transferring the horizontal part of the coracoid to the anterior inferior margin of the glenoid from the 2 o'clock to the 6 o'clock position.

The original procedure required detachment of the upper part of the Subscapularis, but this has since been modified to place the graft through a horizontal split in the Subscapularis and affix it to the Glenoid with 2 screws.

Patte et al[2] explained the success of the open LATARJET procedure by virtue of the triple-blocking effect. We interpret the triple-block effect first by the bony reconstruction of the anterior Glenoid, which serves to increase the Glenoid articular arc. This prevents an otherwise engaging Hill-Sachs lesion from levering on the potentially deficient anteroinferior glenoid rim.

Secondly, the inferior Subscapularis tendon provides dynamic stability in abduction and external rotation due to the tension created by its intersection with the newly positioned conjoint tendon. The sling effect of the conjoint tendon crossing the Subscapularis has a significant effect on the stability of the shoulder in external rotation after 90° of abduction as it has been proven by biomechanical studies.

WHY AN ARTHROSCOPIC LATARJET?

The natural evolution of this procedure was to develop an all-arthroscopic technique that captures all of the advantages of the open procedure while using a minimally invasive technique.

Since December 2003, we have performed over 600 arthroscopic LATARJET procedures. The all-arthroscopic LATARJET is a reliable but difficult technique, with a steep learning curve.

The first instrumentation for both Open and Arthroscopic Techniques was launched in 2010 by DePuy Mitek in collaboration with Dr Lafosse.[3]

Our technique has shown excellent results through midterm follow-up, with minimal complications and good graft positioning.[4] We recommend the arthroscopic procedure to surgeons who have good anatomic knowledge, advanced arthroscopic skills, and familiarity with the instrumentation.

KEY POINTS OF THE ARTHROSCOPIC LATARJET

Arthroscopic LATARJET is a difficult procedure that requires an advanced knowledge and experience on arthroscopic shoulder surgery due to the dangerous extra-articular area of the anterior shoulder, mainly because of the plexus location.

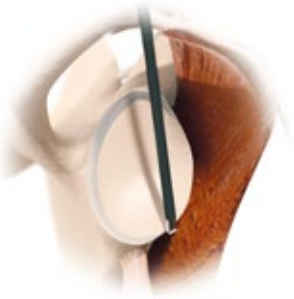
Different to the open surgery, the arthroscope gives a 30° angulation perspective which is responsible for a visual deformity of the visualization. This can lead to some malposition of the preparation and fixation of the bone graft. It is necessary to double-check the important steps of the procedure by changing the Portals of the scope in order to obtain a better 3D perspective.
The bleeding and the swelling are the most disturbing conditions for the surgery and it is crucial to be able to have a perfect collaboration between the anesthesiologist and the surgical team in order to obtain perfect visualization without increasing excessively the pressure of the pump. In case of bleeding, the procedure becomes dangerous and instead of increasing the pressure of the pump which will lead to swelling, the surgeon should ask the anesthesiologist to manage better surgical conditions. On the other hand,as the patient is in beach chair position, an excessive low blood pressure can affect the brain vascularization and it looks mandatory to manage safe hemodynamic conditions and an accurate control of the brain oxygenation.

At least, in case of major difficulties or there is any doubt about the safety of one of the steps of the procedure, the arthroscopic procedure should be converted to an open at any stage in order to achieve accurately the procedure.

KEY SURGICAL STEPS

1

Joint evaluation and surgical final decision



Tips
Mark the Alpha position

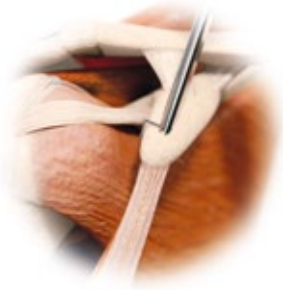
2

Shoulder access, exposure and preparation

Tips
Correctly position
all Portals

3

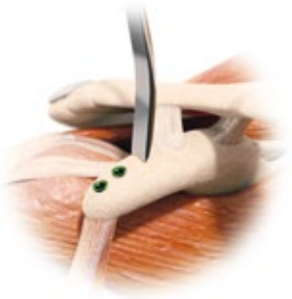
Coracoid preparation



Tips
Correctly position and
orientate the 2 holes

4

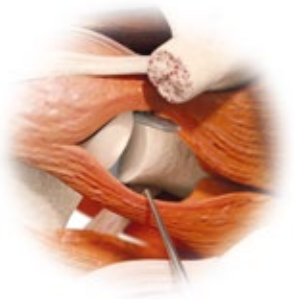
Coracoid osteotomy



Tips
Medial and lateral stress
riser above the Beta hole

5

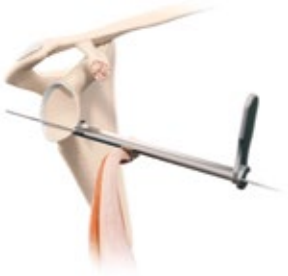
Subscapularis Split



Tips
Visualization +++
Check axillary nerve
2/3 superior, 1/3 inferior

6

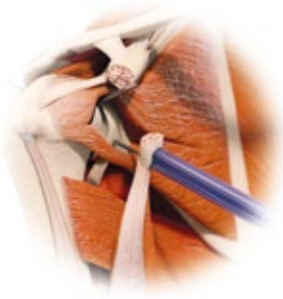
Glenoid's tunnel preparation



Tips
K-wire parallel to
the glenoid

7

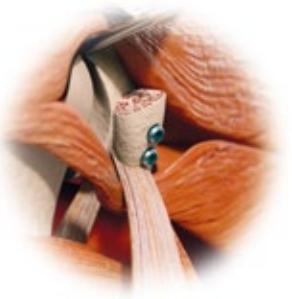
Coracoid attachment and transfer



Tips
Visualization +++
Glenoid flaten by burr

8

Coracoid to Glenoid final fixation



Tips
Flush position
Repeat preparation
if needed

SUMMARY OF PROCEDURE

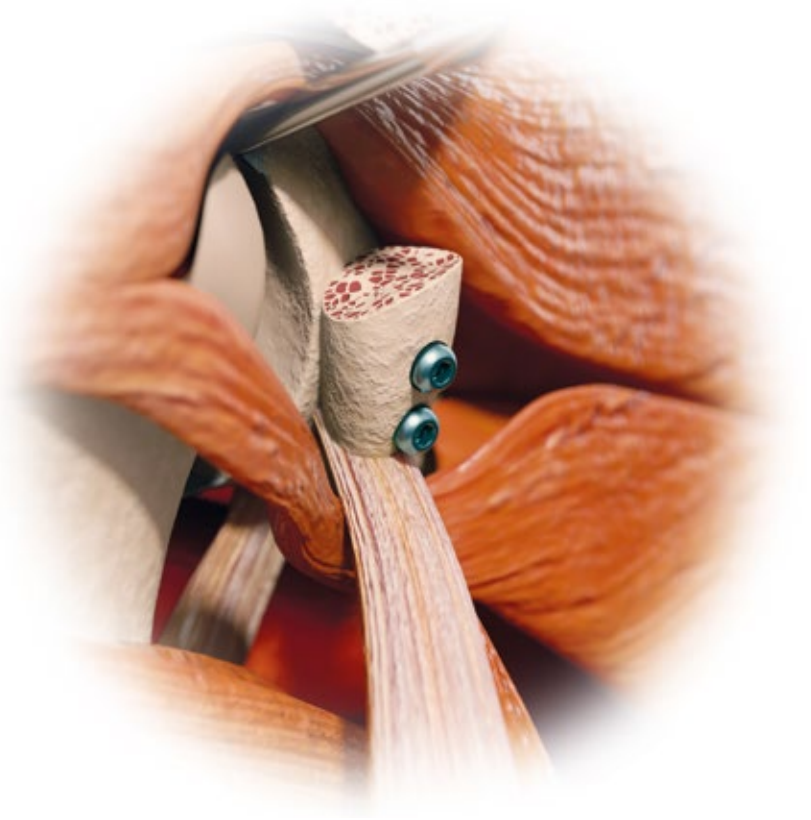


Figure 1.

After joint evaluation and confirmation of the indication of arthroscopic LATARJET, two holes are placed in the Coracoid Process at a defined offset. The holes can be optionally reinforced with Top Hats. The Coracoid is then separated from the Scapula using a Curved Osteotome, leaving the Conjoint Tendon attached to the distal end. After splitting the Subscapularis to expose the anterior Glenoid, a first reference Alpha hole is drilled in the Glenoid with a dedicated guide. The Coracoid graft is fixed to the Double Cannula using long specific Cannulated Screws, passed through the Subscapularis and finally fixed to the Glenoid with two Cannulated Bone Screws along K-wires (Figure 1). With the Coracoid in this position, it fills the bone deficiency, and the Conjoint Tendon can provide a sling effect, stabilizing the shoulder.

PORTAL PLACEMENT

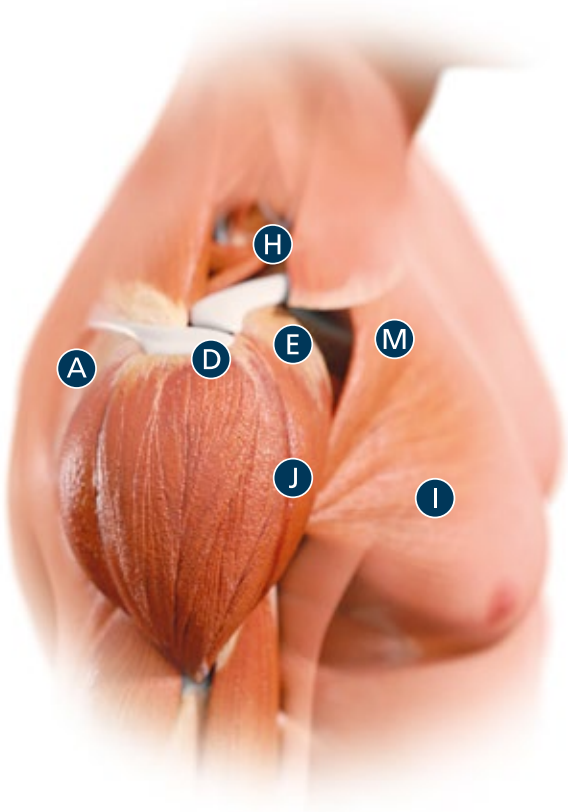


Figure 2. Portal positions, lateral view of left shoulder.

A Portal: **Posterior Portal.** Standard posterior Portal in the soft spot of the shoulder. Used for visualization and for the switching stick to check if the Coracoid graft is flush to the Glenoid.

D Portal: **Antero-Lateral Portal.** On line with the upper border of the subscapularis. This Portal gives access to the GH joint through the rotator interval and to the coracoid area. Used for instruments (VAPR or shaver) during Coracoid preparation and Coracoid osteotomy. Used for visualization during the shoulder's joint for the initial preparation of the glenoid and for its anterior access, exposure, Subscapularis split and fixation of graft. It is also use to place the switching stick as an elevator in order to open the space of the coracoid area.

E Portal: **Anterior Superior Portal** which gives access to the GH joint through the rotator interval. Instruments such as probe, VAPR or shaver are introduced here, and can be used for the switching stick to expose the Coracoid area when the D Portal is occupied by other instruments.

H Portal: **Anterior Superior Portal – Above Coracoid.** Used to initially prepare the Coracoid (Coracoid Drill Guide, K-wires, Coracoid Step Drill, tap and Osteotomes) and for its final abrasion just before its fixation.

I Portal: Mostly used for visualization during Coracoid preparation but also for Subscapularis split and final Coracoid fixation.

J Portal: **Anterior Inferior Portal.** In front of and on line with Subscapularis. Alternate Portal only used for visualization during the preparation, osteotomy, and transfer of the Coracoid graft.

M Portal: **Anterior Portal – Medial to the conjoint tendon.** Used for pectoralis minor detachment, Subscapularis split and use of the Double Cannula. Double Cannula always stays in this Portal; during the osteotomy, Coracoid fixation, Subscapularis split and ultimate Coracoid fixation to the glenoid.

SURGICAL TECHNIQUE

JOINT EVALUATION AND SURGICAL FINAL DECISION

Introduce the scope from the A Portal for evaluation, place the lavage in the E Portal.

After global evaluation of the joint, attention must be paid to:

1. Dynamic instability evaluation including the position of the arm while the Hill Sach's lesion is engaging. This step can require little air pressure before lavage.

2. Location and importance of the cartilage/ bone damage on the humeral head

3. Location and importance of the cartilage of the Glenoid. This step may require the soft tissue detachment from the Glenoid.

4. Statement of the soft tissue by a probe (labrum, ligament and HAGL). Indication of LATARJET is confirmed at this stage.

5. Evaluation and treatment of associated lesion (SLAP, CUFF).

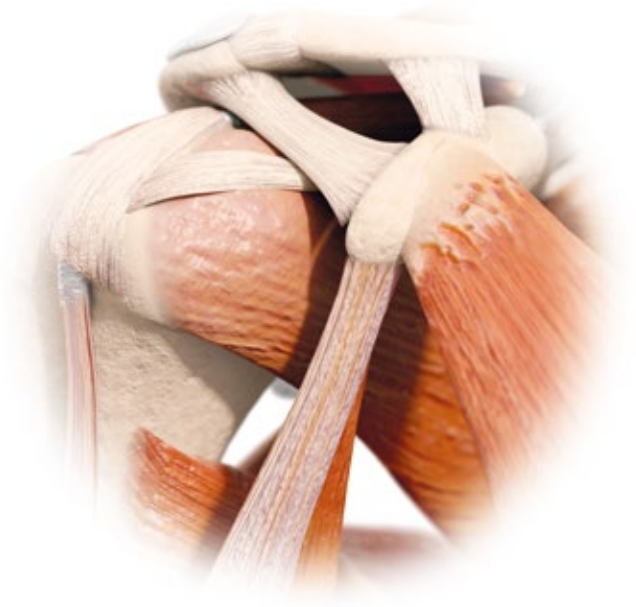


Figure 3. Joint evaluation.

SURGICAL TECHNIQUE

SHOULDER ACCESS, EXPOSURE AND PREPARATION

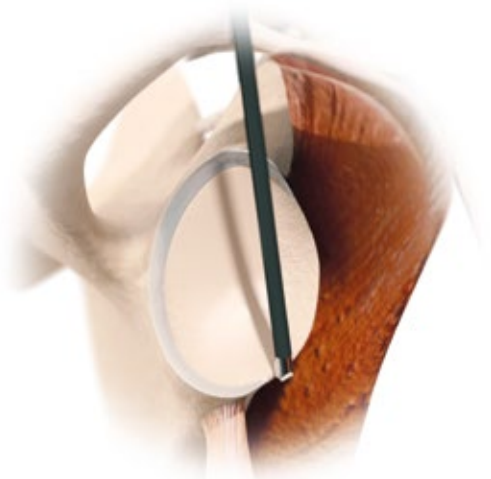


Figure 4. Marking the 5 o'clock position with VAPR.

Figure 5. Detach the Pectoralis Minor from Coracoid.

Locate and mark with VAPR the 5 o'clock position in order to determine where the bone graft will be placed (Figure 4). Labrum is removed from 2 to 5 o'clock with FMS shaver. Open by L Shape the joint capsule with VAPR to fully expose the Subscapularis muscle on the same level.

Open rotator interval by shaving the capsule between upper part of Subscapularis tendon and Superior Gleno-Humeral Ligament.

Determine the D Portal by placing a Long Spinal Needle parallel to the upper part of the Subscapularis tendon. As the coracoid is exposed usage of both VAPR and the FMS shaver will be necessary.

Expose the Coracoid undersurface while allowing conjoint tendon to remain attached to Coracoid by detaching the Coracoacromial ligament. Release the lateral side of the conjoint tendon from the pectoralis facia as far as the Pectoralis major insertion.

Move scope to the D Portal. Visualizing from this Portal, above the Subscapularis tendon, allows viewing of both the articular and extra-articular sides of the Subscapularis.

Instruments are in E Portal. Detach remaining capsule tissue from the location where the bone graft will be placed. Remove bony Bankart and abrade anterior Glenoid neck.

Remove and coagulate the end of the bursa under the Coracoid. Determine the I, M and J Portal locations by placing the three needles under visualization from the D Portal. I should be axillary fold, just on line with the coracoid process. M is through the pectoralis Major, medial to the conjoint tendon in the plan of the Glenoid, on a horizontal line between the axillary fold and the clavicule. The J Portal is between I and D Portal on a line which is part of a circle centered on the Coracoid passing above M and I Portals.

Place the scope in the I Portal and the VAPR in the M Portal. Use the Switching Stick on D Portal to elevate the deltoid and expose the Coracoid process.

Detach the Pectoralis minor from Coracoid, exposing both upper and inferior sides of the muscle. The VAPR should be kept close to the Coracoid, always facing the bone (Figure 5). Splitting the Pectoralis minor from the conjoint tendon requires use of a variable landmark, and caution must be used to visualize and to avoid damage of the musculo-cutaneous nerve in this location behind the Pectoralis minor. All bursa and fat should be removed to fully expose the Coracoid junction between the vertical and horizontal parts of the bone.

SURGICAL TECHNIQUE

CORACOID PREPARATION

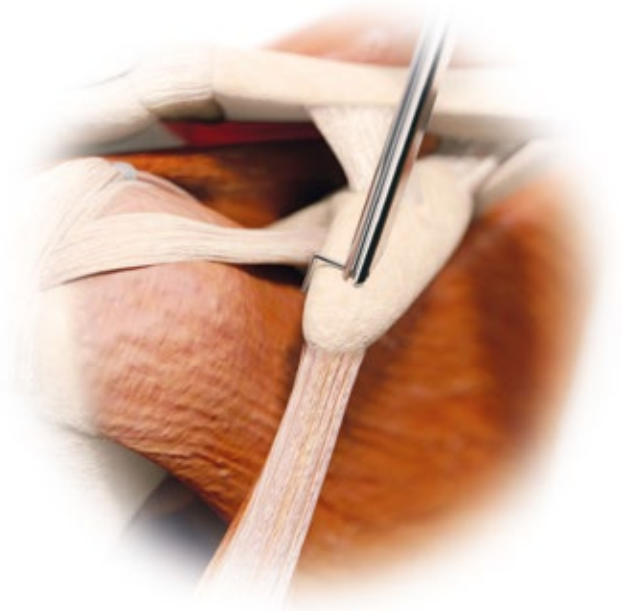


Figure 6. Positioning the Inline Coracoid Guide.

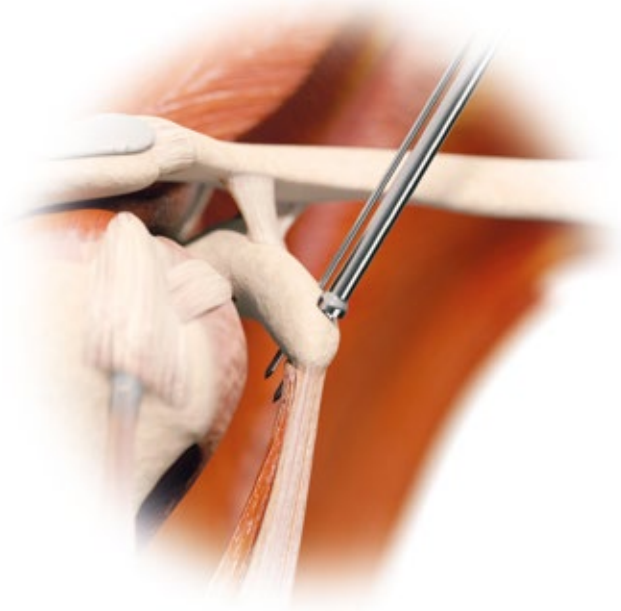


Figure 7. Drilling the Alpha hole.

The arm should be in internal rotation neutral forward flexion. Determine the H Portal's location by using a needle above the middle of the Coracoid, as medially as possible. The head of the patient may be in the way during the drilling stage. Place the H Portal in a location that accommodates the space required by the drill.

Make a minimal incision to introduce the Coracoid Drill Guide through the H Portal. Place the Inline Coracoid Drill Guide flush on top of the Coracoid, so that the oblique axis is relative to the long spine needle marking the Coracoid's end. Activate the offset of the Inline Coracoid Guide if required (Figure 6). The offset places the Inline Coracoid Guide at a distance of 7 mm from the lateral side of the Coracoid. The distal Coracoid bone stock must be assessed too with the offset pin positioned at the tip of the process. That will position the Alpha hole 7 mm away from the distal tip of the Coracoid process.

Introduce K-wires in Alpha and Beta holes. Paying attention not to introduce more than 3 cm.

Locate the final position of the Beta hole relative to the Alpha axis and drill the Coracoid K-wire through the Inline Coracoid Drill Guide in the Beta position.

Check the position of both K-wires. If they are not located correctly, replace them one by one.

Remove the Inline Coracoid Drill Guide with the retracted offset, leaving the Coracoid K-wires in the Alpha and Beta holes.

Drill the Alpha hole completely through the Coracoid, over the Coracoid K-wire, using the Coracoid Drill for a surgery without top hat or the Coracoid Step Drill for a surgery with Top Hat (Figure 7).

Remove the drill from the Alpha hole, which will remove the K-wire. Drill the Beta hole completely through the Coracoid, over the K-wire in the same manner.

Figure 8. Top Hats in the Alpha and Beta holes.

For a surgery with Top Hat, tap the hole with the top hat tap then open the sterile packaging and put Top Hats in the Alpha and Beta holes using the combo screwdriver. A K-wire must be used to lead and to secure the Top Hat insertion (Figure 8).

Subscapularis split can be done at this step or after the cut of the coracoid.

To create the split in the Subscapularis, fully visualize both sides of the muscle. The location of the split will be at the union between 2/3 superior and 1/3 inferior of the muscle, at the same level as the future location of the graft. The joint should already be prepared. Use this level as a landmark to introduce a Switching Stick inside out. Be aware that the plexus will obstruct the orientation of the Switching Stick laterally to the conjoint tendon once the stick is passed through the Subscapularis muscle. An assistant should handle the scope on D Portal above the Subscapularis tendon, while the surgeon uses both hands to operate the Switching Stick and the Subscapularis Channeler.

Insert a Switching Stick from posterior A Portal, through the split of the Subscapularis with one hand. With the other hand, use the Channeler to maintain the muscle, recline the plexus and insure the CT is medial.

Once the SS is out of the CT, place the scope back to the J Portal and use the VAPR from the I Portal to perform the split until the glenoid is exposed. Use caution to avoid any damage to the humeral cartilage.

Enlarge the split and confirm adequate access to the glenoid using the Subscapularis Channeler.

Alternatively, the Subscapularis split can be performed after the Coracoid osteotomy.

SURGICAL TECHNIQUE

CORACOID OSTEOTOMY

Perfectly clean the Coracoid on a 360° circle between the Beta hole and the insertion of the CC ligament where the osteotomy will be done. Ensure a safe margin above the Beta hole, leaving enough bone matter around the Beta hole in order to not compromise it.

Using the Sharp Curved Osteotome, manage a medial and a lateral stress riser on the Coracoid cortex at the level of the osteotomy. It is important to manage a sufficient decortication of the Coracoid at the site of the osteotomy. Cut the Coracoid using the Sharp Curved Osteotome between the 2 stress riser lines (Figure 9).

A reference line on the Sharp Curved Osteotome can be used to guide the osteotomy. The line will give an appreciation about the Sharp curved Osteotome inclination and penetration into the bone.

Once the Coracoid is detached, it is reclined inferiorly paying attention to the MC nerve and the Subscapularis is exposed by cutting the facia between the Coracoid and the Subscapularis muscle.

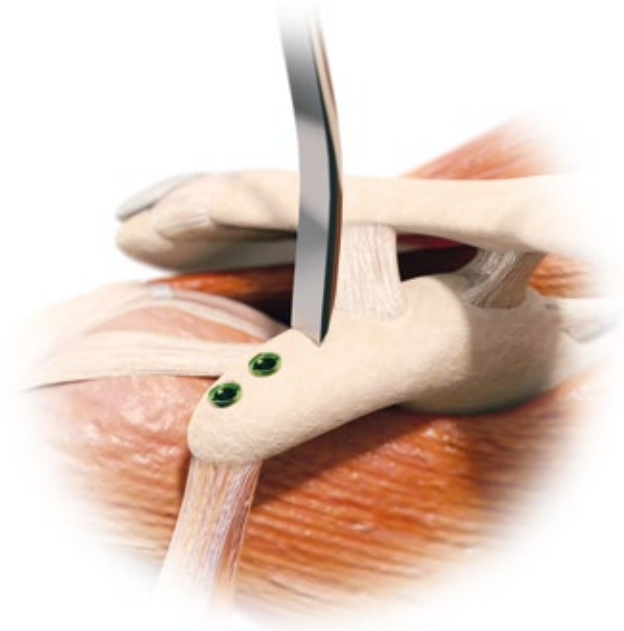


Figure 9. Cut the Coracoid using a Sharp Curved Osteotome.

SURGICAL TECHNIQUE

SUBSCAPULARIS SPLIT

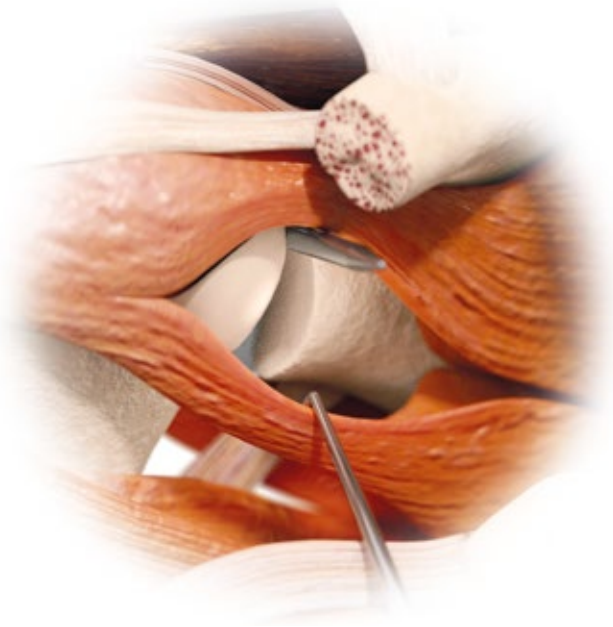


Figure 10. Confirm adequate access to the Glenoid.

The scope is placed on the I Portal. Before starting the split, a probe is introduced in the GH joint through the A Portal. The location of the split will be at the union between 2/3 superior and 1/3 inferior of the muscle, at the same level as the future location of the graft.

Axillary nerve should be visualized in order to insure its safety. Rather than using an inside out technique with the switching stick which can lead to plexus damage, the split will be managed from outside in, as it is done in open surgery. The VAPR is introduced through the M Portal and the split is started on the medial side of the Subscapularis at the level of the muscle. The arm is placed in slight forward flexion and neutral rotation. As soon as the split allows to visualize the capsule, a probe which was previously introduced through the A Portal is elevating the upper part of the Subscapularis. This allows a safe and complete split of the muscle toward its tendon. The slit of the muscle is then extended to the tendon. The more the tendon is split, the larger to window of access to the joint will be wide. Use caution to avoid any damage to the humeral cartilage.

Enlarge the split and confirm adequate access to the glenoid (Figure 10) using the Subscapularis Channeler by bringing the arm to external rotation, paying attention not to dislocate the shoulder.

The opening of the Subscapularis window can be managed by different tools which can be used together or not. The probe coming posteriorly through the

A postal can elevate the upper subscap and can even lower the under subscap. Same effect can be obtain by a switching stick introduced in the anterior shoulder through the I or J Portal depending on the placement of the scope. Once the Subscapularis window is widely open, it is important to look to the anterior Glenoid from the I Portal and to check the bed of the Coracoid by orientating alternatively the scope superiorly and inferiorly. The joint should already be prepared but in case the preparation is not good enough, it can be completed at this step by the bur introduced through the J or the M Portal.

Decrease the Glenoid anteversion by having an assistant pull the scapula backward in order to place the shoulder in proper position for the alignment of the Double Cannula.

Two options are available to manage the Glenoid tunnels. The first (Option A) is to use the Glenoid guide; the second (Option B) is to directly use the Coracoid cannula with a dedicated probe trough the A Portal.

SURGICAL TECHNIQUE

GLENOID'S TUNNELS PREPARATION

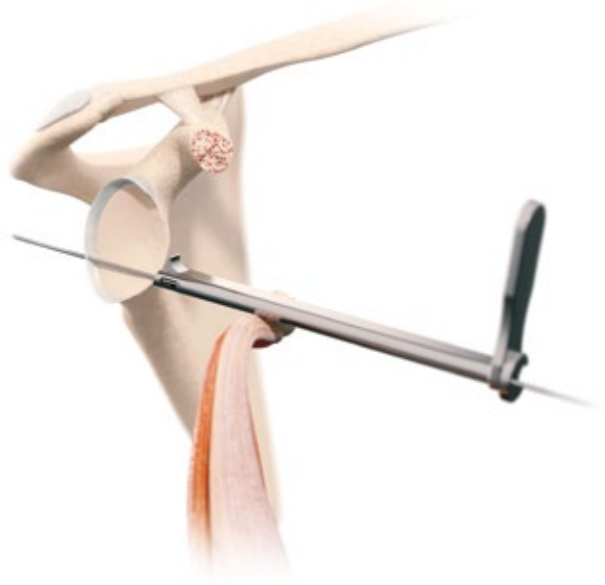


Figure 11. Glenoid Guide final offset.

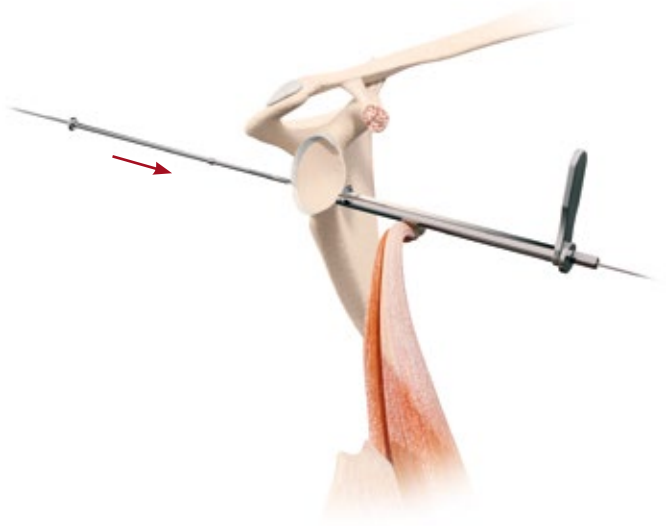


Figure 12. Reference tube inserted from posterior.

Option A : use of the Glenoid guide

The Glenoid Guide is inserted through the Subscapularis Muscle using the M Portal. The two Cannula Obturators are inserted in order to decrease fluid leakage.

The Glenoid Guide is placed on the Glenoid anterior border with the handle facing up.

The Glenoid Offset pin is introduced on the lateral side (cartilage side) of the Glenoid and the Coracoid Screw 3.5 mm on the medial side of the Glenoid (bone side).

The adequate offset is selected in order to place the bone graft correctly on the Glenoid.

"0" will place the graft flush to the Glenoid surface.

"A" will place the graft 2 mm medialized to the Glenoid surface.

"B" will place the graft 4 mm medialized to the Glenoid surface.

Push the Glenoid Guide medially as parallel to Glenoid surface as possible.

A K-wire is gently slide in front of the cartilage surface through the Glenoid offset pin to determine the final offset (Figure 11). The pin is then pushed through the skin of the posterior shoulder. The exit Portal of the wire will confirm its adequate position and direction as it should be very close to the A Portal.

The position of the cannula leaded by the K-wire in front of the Glenoid surface will determine the orientation of the first hole in the Glenoid.

The second K-wire will be drilled through the Coracoid Screw 3.5 mm in order to landmark the Alpha hole on the Glenoid paying attention that the first K-wire is at the level of the Alpha mark which as been done at the beginning of the procedure and that it remains flush to the cartilage of the Glenoid.

Again the position and orientation of the K-wire is checked, it should be at the same horizontal level and maximum 1 to 2 fingers medial to the A Portal. If not, the K-wire should be replaced.

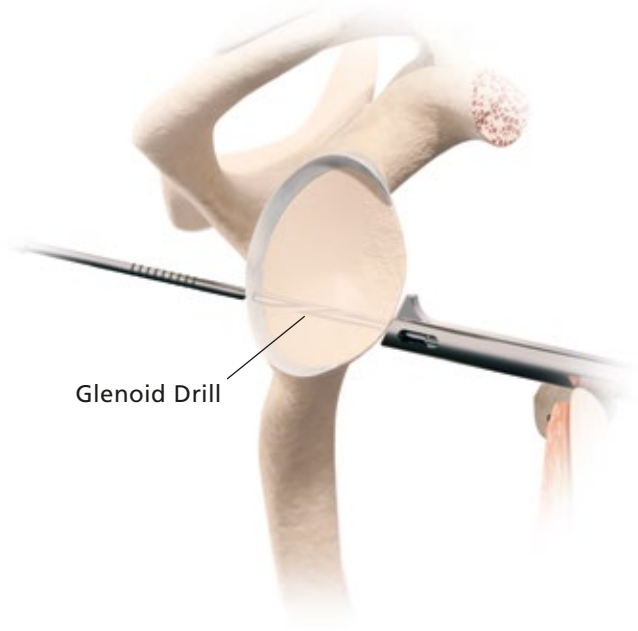


Figure 13. Drill the Glenoid Alpha hole.

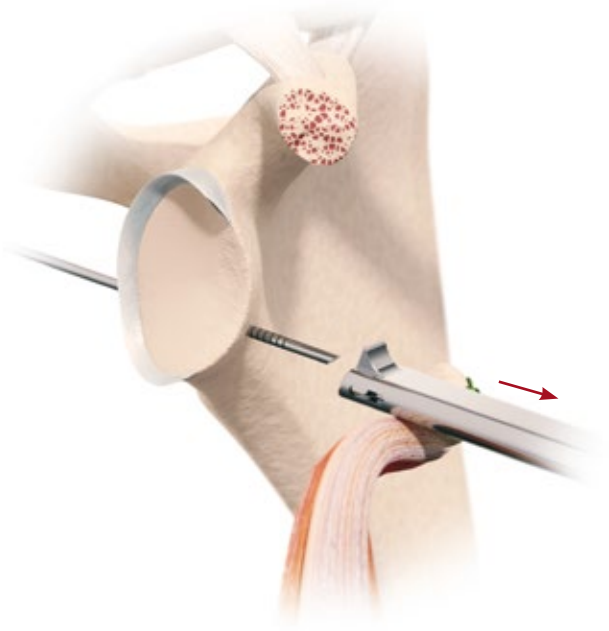


Figure 14. Measure the Glenoid length.

The reference tube is inserted from posterior over the K-wire (Figure 12). A small skin incision is needed to facilitate the Reference Tube insertion.

Remove the Coracoid Screw 3.5 mm and drill the Alpha hole with the Glenoid drill (Figure 13). Once the drill has perforated the posterior cortex, the tube is pushed from back to front while the drill is removed and the measurement of the length of the Glenoid can be read on the tube at the anterior border of the Glenoid (Figure 14). The Glenoid guide and the 2 wires are removed, leaving the tube in the Alpha hole. The Coracoid Cannula plugged by the 2 long blue plastic plugs can then be introduced through the M Portal.

SURGICAL TECHNIQUE

GLENOID'S TUNNELS PREPARATION

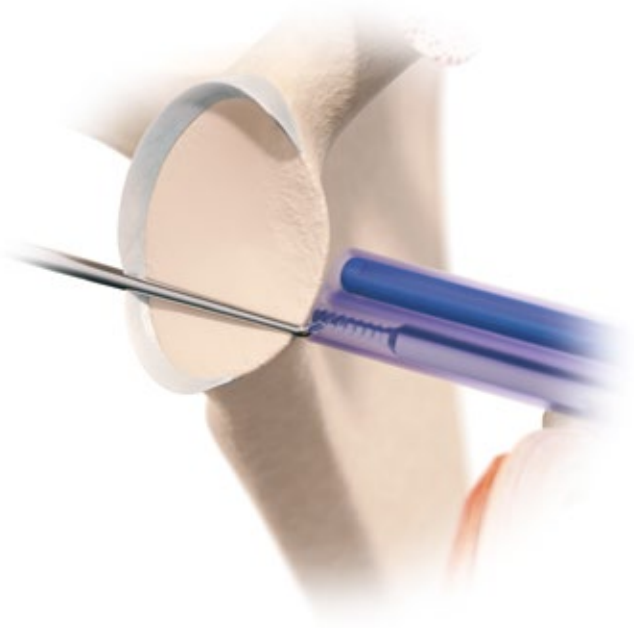


Figure 15. Double Cannula with Long Coracoid Screw.

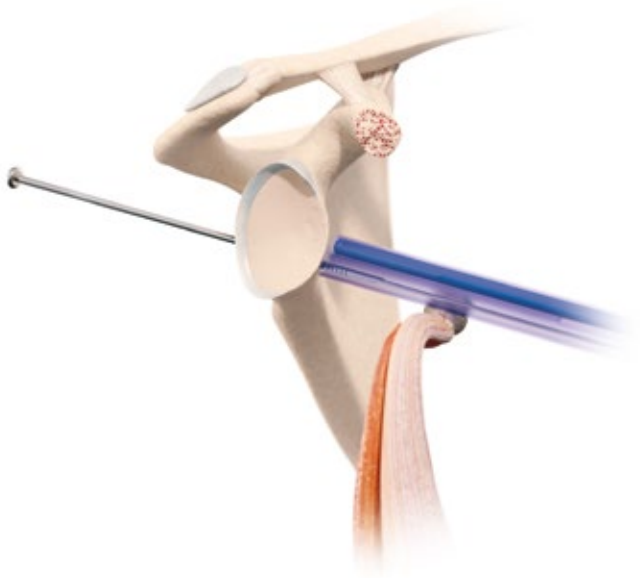


Figure 16. Reference tube inserted from posterior.

Option B : direct use of the Coracoid Cannula

The Coracoid Cannula inserted in the M Portal is directly positioned toward the Glenoid anterior border through the Subscapularis split while a dedicated probe is inserted through the back A Portal. Push the Double Cannula medially as parallel to Glenoid surface as possible, in order to achieve an optimal angle. The long Coracoid screw is inserted in the plastic Coracoid cannula instead of the inferior long plastic plug (Figure 15). The distal extremity of the probe which has a 5 mm offset is positioned at the level of the Alpha landmark. A K-wire is inserted through the long Coracoid screw and positioned at the level of the Alpha landmark while the cannula is maintained at the correct 5 mm offset from the cartilage by the probe. The K-wire is inserted through the Glenoid with the same rules as previously described. Like on option A, at that step, the A tunnel is drilled and the posterior tube is pushed through before the K-wire removal (Figure 16).

SURGICAL TECHNIQUE

CORACOID ATTACHMENT AND TRANSFER

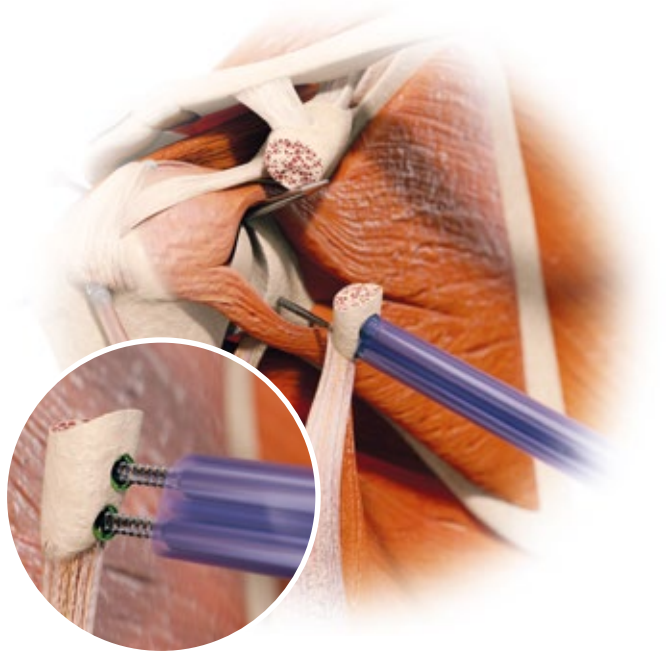


Figure 17. Hook the Coracoid with the Cannula.

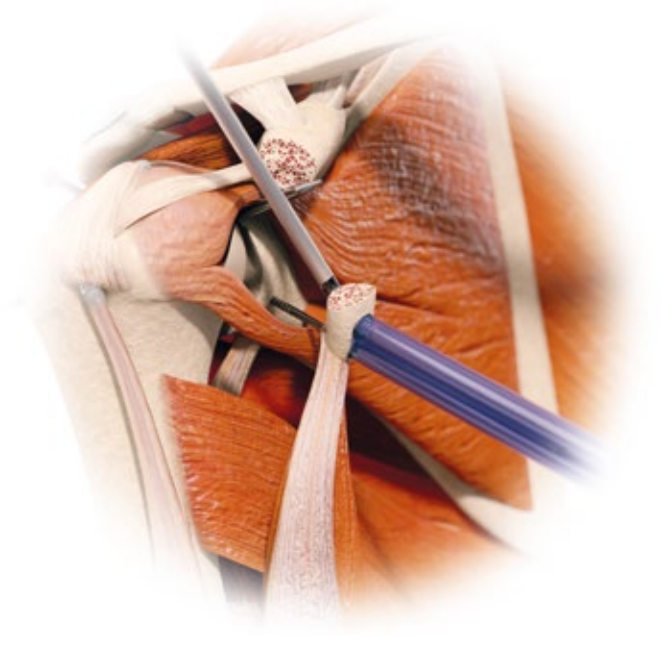


Figure 18. Burr the Coracoid surface.

While the scope is moved to the J Portal, the cannula is used to find and to manipulate the Coracoid in order to face the 2 holes. Remove the Cannula Obturators from the Double Cannula and insert the two Coracoid 3.5 mm Screws.

Thread the Cannulated Coracoid 3.5 mm Screws into the Alpha and Beta holes. Continue until the screw edge is seen through the other end of the Cannula.

Tighten the Coracoid 3.5 mm Screws until they completely penetrate through the Alpha and Beta holes of the Coracoid.

Final tightening of the Coracoid process to the Cannula must be done with the Combo Screwdriver. Check to ensure solid fixation. Mobilize the Coracoid process and make sure the conjoint tendon is fully released from the Pectoralis minor.

Put the upper Cannula small Plugs on the long screws in order to decrease fluid leakage. Connect the Double Cannula and the Graft with the Reference tube (FIgure 17) by a Kirschner Wire in Alpha Coracoid screw. Once the connection has been performed, gently advance the Graft toward the Subscapularis and rotate the graft to face a burr inserted on H or E to smooth the Coracoid surface (FIgure 18). Have the assistant hold the visualization in the J Portal, while the surgeon holds the burr and the Double Cannula in the M Portal. Slightly unscrew the Beta Coracoid screw behind the Coracoid cortex.

To pass the Coracoid graft through the Subscapularis split, the cannula is gently advanced along the wire while the upper Subscapularis is elevated by the intra articular probe previously introduced in A Portal.

Attention must be paid to the axillary nerve. The cannula is turned in a way that it places the Coracoid on a horizontal position and passed under the Subscapularis toward the anterior Glenoid. The graft is strongly maintained parallel and flush to the Glenoid cortical bone while the upper K-wire is inserted on the Beta long Coracoid screw. The Glenoid K-wires should exit the skin. Strongly clamp the K-wire on the posterior side of the shoulder. Ensure that the two K-wires are parallel.

SURGICAL TECHNIQUE

CORACOID - GLENOID FIXATION

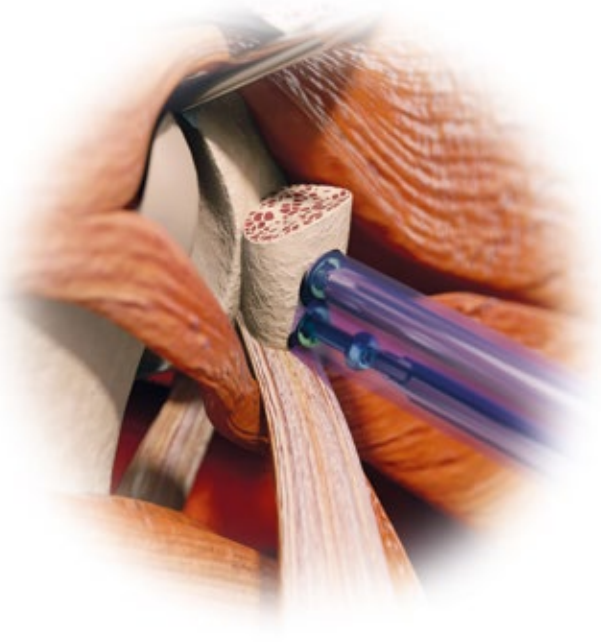


Figure 20. Screw Insertion.

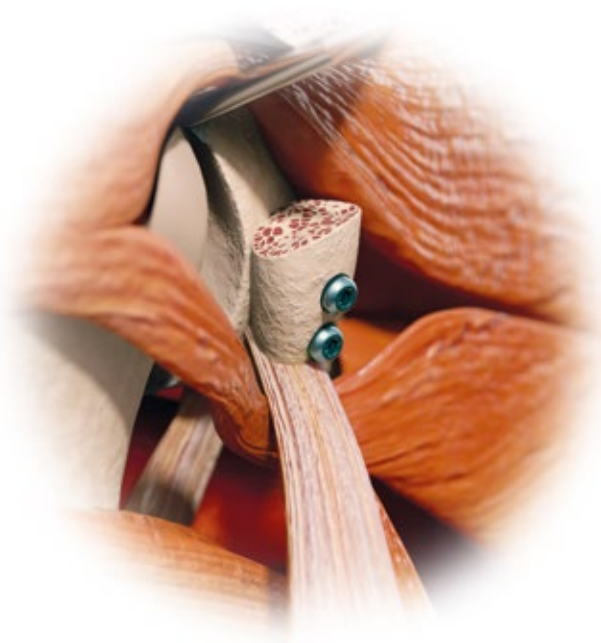


Figure 20. Final Coracoid – Glenoid fixation.

The long Alpha Coracoid screw is removed and the Reference Tube is pushed from posterior until the bone stop. It is now visible in the Double Cannula to measure the final fixation length (distance between the Coracoid near cortex and the Glenoid far cortex) and the needed screw length. Open the sterile packaging and Load the LATARJET Cortical Screw over the Glenoid K-wire and insert into the Alpha hole using the combo screwdriver. Do not over-tighten the screw (Figure 19).

Remove the Coracoid 3.5 mm Screw from the Beta hole and drill across the Glenoid to create the second hole while the K-wire is maintained posteriorly by a clip. Repeat steps of measurement by the tube and insert the correct length screw for the Beta hole.

Confirm that the Coracoid graft is correctly placed.

Remove both Glenoid K-wires by pulling them out from the posterior Portal. Tighten both screws gently.

Remove the Double Cannula from M Portal (Figure 20).

Assess the final Graft Fixation. If too proud, use a burr to gently smoothen the coracoid articular edge paying attention not to damage axillary nerve.

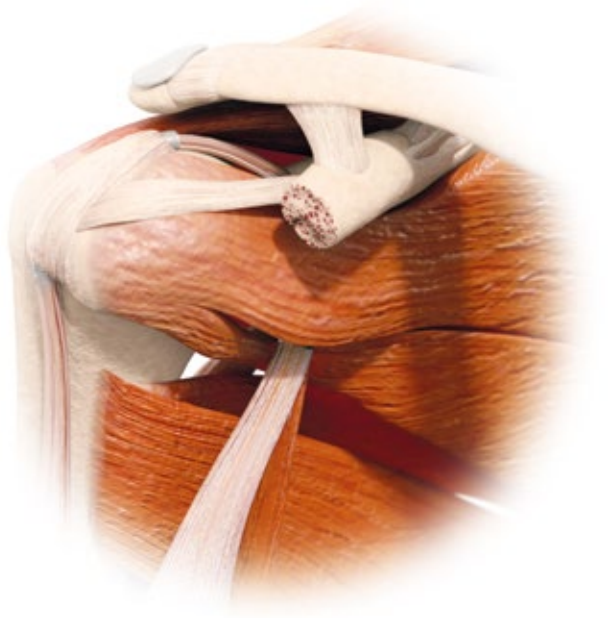


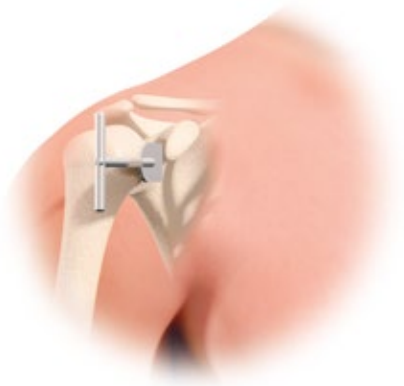
Figure 21. Assess correct position of the Subscapularis.

Assess the correct position of the Subscapularis above the graft and the sling effect of the conjoint tendon above the inferior Subscapularis before skin closure (Figure 21).

RETRACTORS

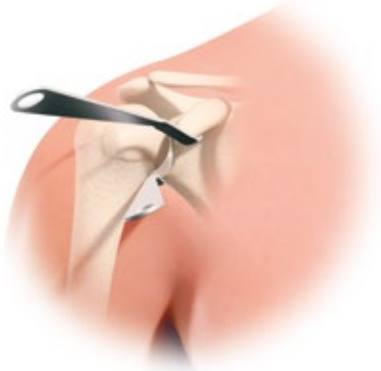
288212 Humeral Head Retractor

Access to the Glenoid.



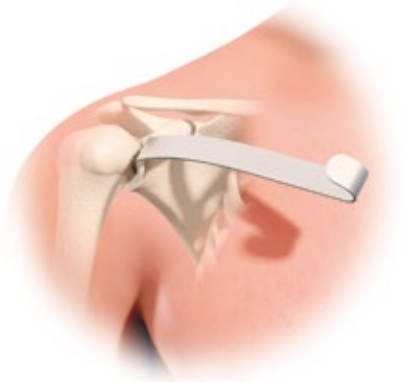
88213 Hohmann Retractor

Access to the Coracoid and Glenoid.



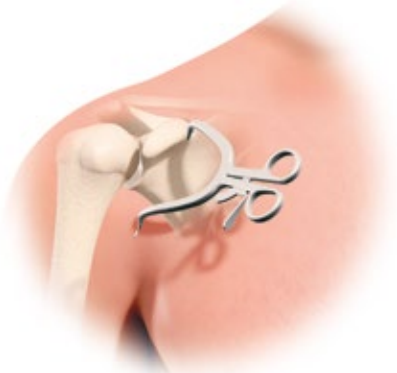
288214 Glenoid Lever, Double Prong

Deltopectoral approach spreading, access to the Glenoid.



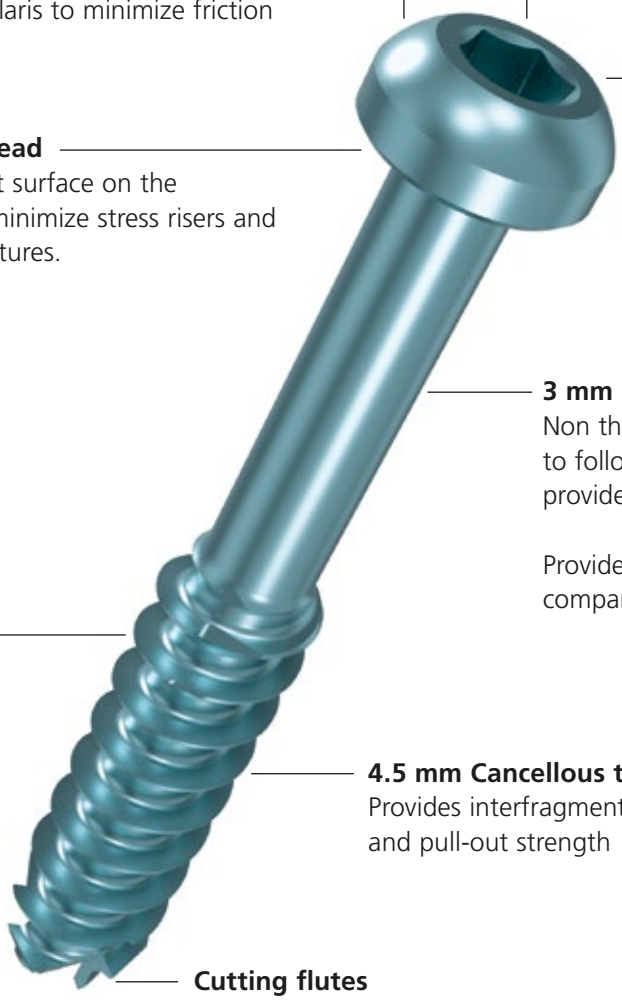
288215 Subscapularis Spreader

Deltopectoral and Subscapularis spreading.



LATARJET SCREW FEATURES

FUNCTION: FIXATION AND COMPRESSION OF THE GRAFT



1.7 mm Cannulation
Guided with a 1.5 mm stable Kirschner Wire.

Rounded and low profile screw head
Provides a rounded surface against the Subscapularis to minimize friction and irritation.

2.5 mm HEX
Compatibility with the legacy system.

Perfect fit with the Combo Screwdriver.

Flat screw head
Provides a flat surface on the Coracoid to minimize stress risers and Coracoid fractures.

3 mm non threaded portion of 15 mm
Non threaded portion into the Coracoid to follow the lag screw principle and provide compression.

Provides smaller holes into the Coracoid compared to the Lag technique.

Retro cutting flutes
Provides a mean to cut the bone during removal.

Provides easier screw revision.

4.5 mm Cancellous thread
Provides interfragmentary compression and pull-out strength

Cutting flutes
Provides a cutting profile that simplify screw insertion and minimize torque on the Combo Screwdriver.

ORDERING INFORMATION

Implants (Sterile)

288222	Sterile LATARJET Screw, 28 mm, Single Packed
288223	Sterile LATARJET Screw, 30 mm, Single Packed
288224	Sterile LATARJET Screw, 32 mm, Single Packed
288225	Sterile LATARJET Screw, 34 mm, Single Packed
288226	Sterile LATARJET Screw, 36 mm, Single Packed
288227	Sterile LATARJET Screw, 38 mm, Single Packed
288228	Sterile LATARJET Screw, 40 mm, Single Packed
288229	Sterile LATARJET Screw, 42 mm, Single Packed
288230	Sterile LATARJET Screw, 44 mm, Single Packed

288231	Sterile Top Hat, Double Packed

Procedure Kits

288238	LATARJET Procedure Kit Includes 3 x 380 mm Glenoid K-wires

288239	Bristow Procedure Kit Includes 2 x 380 mm Glenoid K-wires

ORDERING INFORMATION

Reusable Instruments

288101 LATARJET Small Switching Stick

288240 LATARJET Switching Stick

288200 Inline Coracoid Drill Guide

288206 Coracoid Offset Pin (assembled with 288200)

288201 Coracoid Drill

288202 Coracoid Top Hat Drill

288203 Top Hat Tap

288204 Sharp Curved Osteotome

288205 Subscapularis Channeler

288208 Glenoid Offset Pin

288209 Coracoid Screw, 3.5 mm

288210 Reference Tube

288211 Combo Screwdriver

288212 LATARJET Humeral Head Retractor

288213 LATARJET Hohmann Retractor

288214 Glenoid Lever, Double Prong

288215 Subscapularis Spreader

288216 Extraction Driver

288221 Glenoid Guide

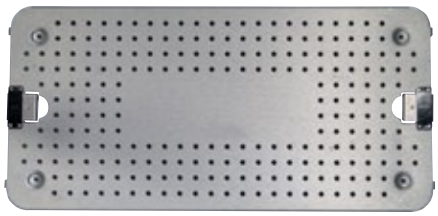
288241 LATARJET Glenoid Drill

288242 LATARJET Small Probe

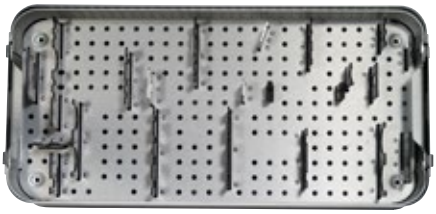
288207 Glenoid K-wire (380 mm)
Optional, can be ordered separately

ORDERING INFORMATION

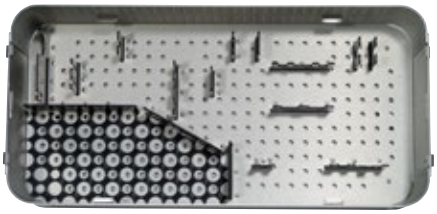
Case and Trays



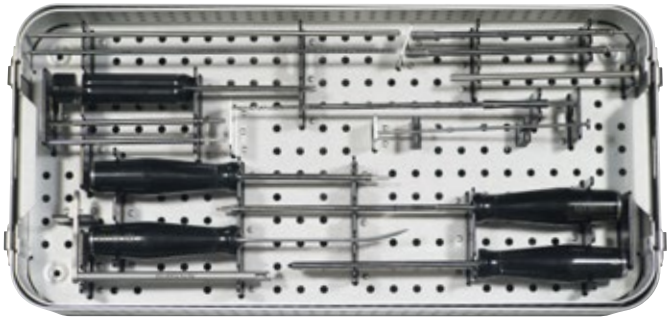
288217 LATARJET Case Lid

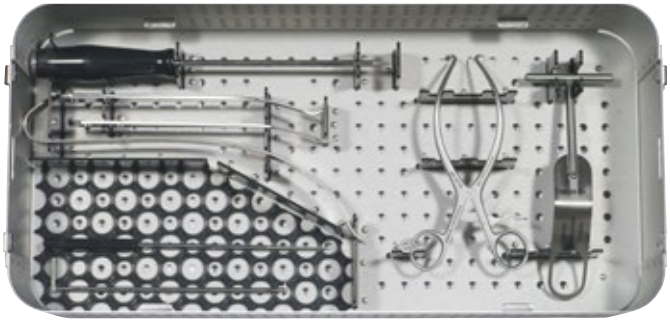


288218 LATARJET Tray



288219 LATARJET Case





288232 LATARJET Full Tray Assembly

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2. Patte D, Bernageau J, Bancel P. The anteroinferior vulnerable point of the glenoid rim. New York: Marcel Dekker; 1985.
3. DePuy Mitek To Launch Bristow-Latarjet Instability Shoulder System For Treatment Of Recurrent Joint Instability. Available from http://www.investor.jnj.com/releasedetail.cfm?ReleaseID=472533 [Accessed 29/06/2016].
4. Guillaume D D, Fogerty S, Rosso C, Lafosse L. The Arthroscopic Latarjet Procedure for Anterior Shoulder Instability: 5-Year Minimum Follow-up. Am J Sports Med November 2014 Vol. 42 No. 11 2560-2566.

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