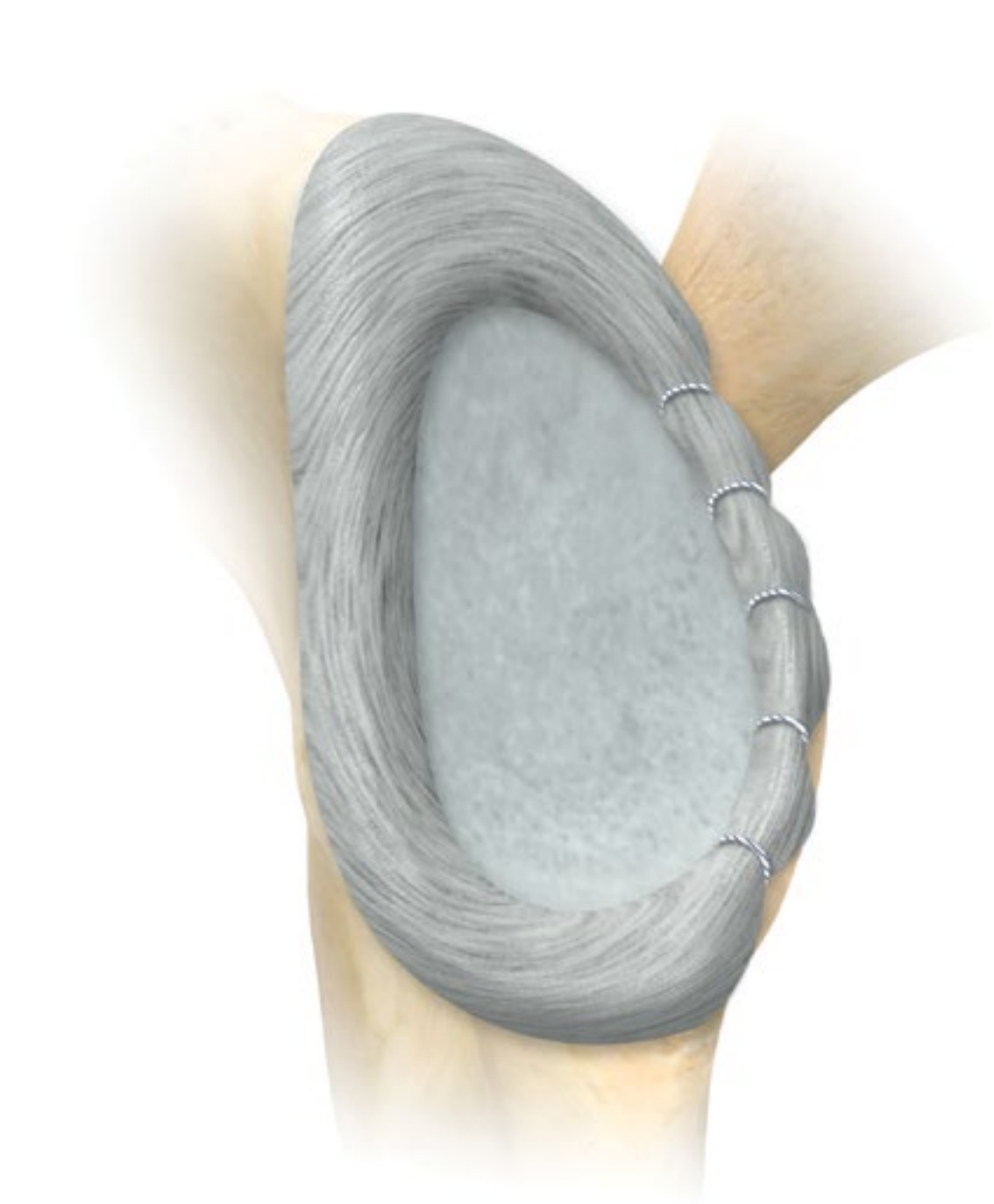

JuggerKnotless Soft Anchor for Labral Repair

Surgical Technique

Surgical Protocol by:
Jeffrey Hartzell, MD, Peter Borden, MD,
and David Schneider, MD

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When one surgeon connects with one patient to provide personalized care, the promise of medicine is fulfilled.

JuggerKnotless Soft Anchor for Labral Repair

Patient Positioning

Beach chair or lateral decubitus depending on surgeon preference.

Portal Placement

Access labral pathology to carry out arthroscopic shoulder stabilization utilizing a 7 mm AquaLoc Cannula. Placement of the cannula should be just superior to the subscapularis tendon using an anterior portal. Note: A spinal needle can be used to localize and ensure proper angle and cannula placement.

Standard posterior placement is utilized for diagnostic purposes. A standard anterior portal located superior to the subscapularis tendon may be created using a Wissinger Rod for inside-out placement or with a spinal needle for outside-in placement. If a Bankart labral tear is encountered, an anterior-superior portal may be placed for arthroscopic viewing with instrumentation through the anterior portal. If a SLAP labral tear is encountered a superior portal may by placed for viewing and instrumentation.

Prepare Surface

The bone surface may be roughened as desired to create a bleeding bone surface; however, cortical bone integrity must not be compromised at anchor sites. An elevator should be used to help free scarred tissue from the scapula neck of the glenoid to allow tissue to be mobilized.

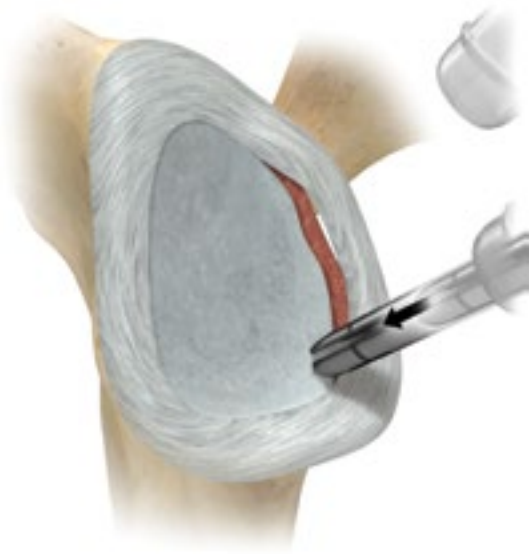

Figure 1

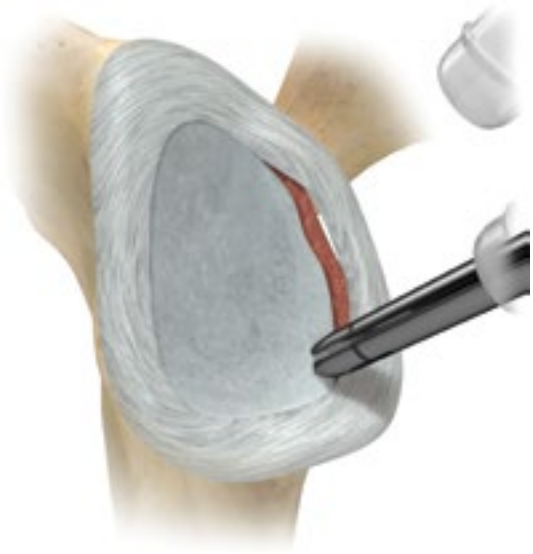

Figure 2

Placement of the JuggerKnotless Guide

The guide is passed through a cannula portal to the repair site (Figure 1). Position the JuggerKnotless guide at a stable location on bone (Figure 2).

Figure 3

Figure 4

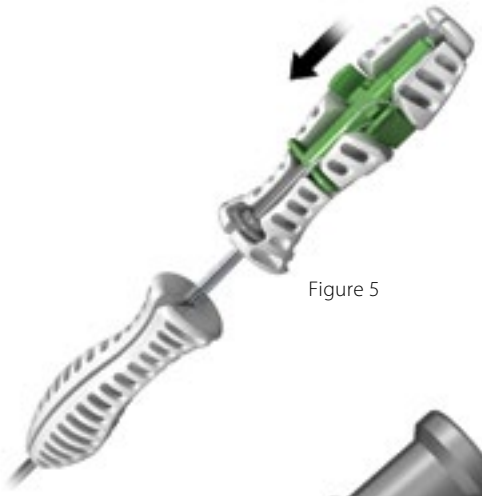

Figure 5

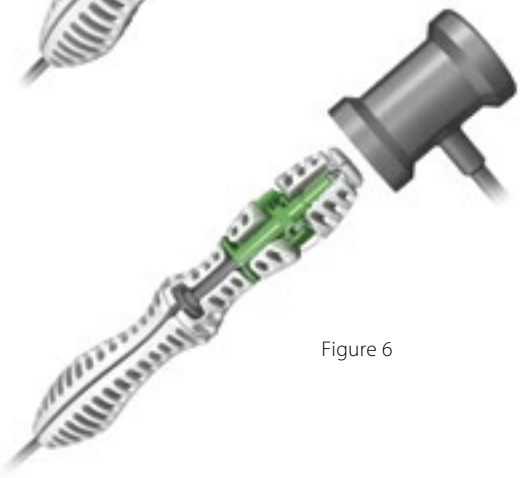

Figure 6

Drill Pilot Hole

To ensure appropriate drill depth, connect the JuggerKnotless drill bit to a power drill so that the proximal laser-etch line is flush with the distal edge of the drill chuck. Insert the drill into the JuggerKnotless guide (Figure 3). Advance drill until contact is made with the guide handle (Figure 4). Carefully maintain stability of the drill guide during drilling and after removal of the drill.

Insert Anchor

Note: Caution must be taken to maintain precise guide position over the pilot hole during drill removal. While maintaining the guide position securely against the bone, insert the JuggerKnotless Anchor through the guide and into the pilot hole (Figure 5). Start to seat the anchor by hand, then lightly mallet to fully seat the anchor into bone. Align the laser etch marks in the guide window or bottom out inserter handle on the back of the guide to ensure anchor is inserted to appropriate depth (Figure 6).

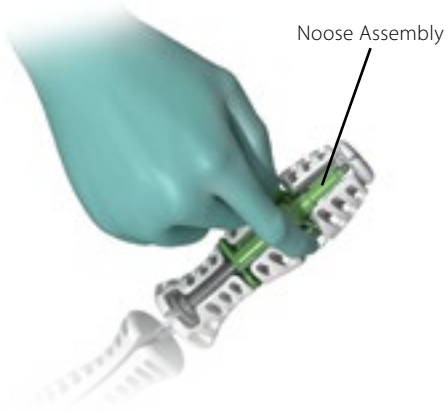

Figure 7

Figure 7b

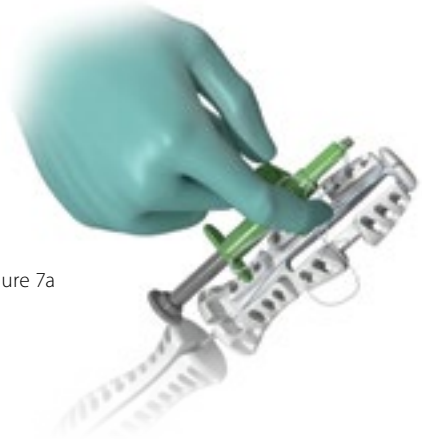

Figure 7a

Deploy Anchor

First remove the light green noose assembly and sutures from the inserter by lightly squeezing the side tabs (Figures 7, 7a, 7b).

Figure 8

Figure 9

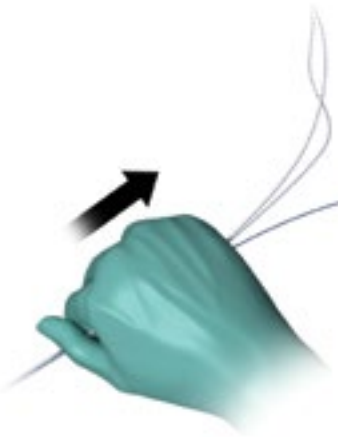

Figure 10

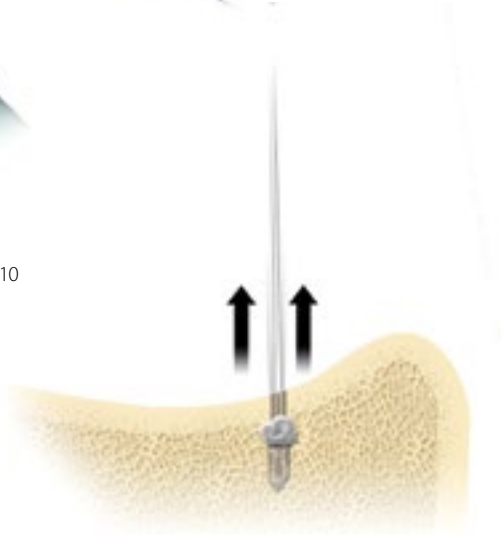

Figure 10a

Deploy Anchor (cont.)

Next, pull anchor inserter handle directly out of the guide (Figure 8). Finally, remove drill guide.

Note: Slide sutures with the noose along the opened slot of drill guide while removing the guide (Figure 9). Pull firmly on all sutures to ensure anchor is under cortical bone and fixation is achieved (Figures 10 & 10a).

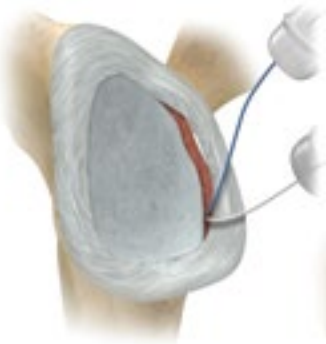

Figure 11

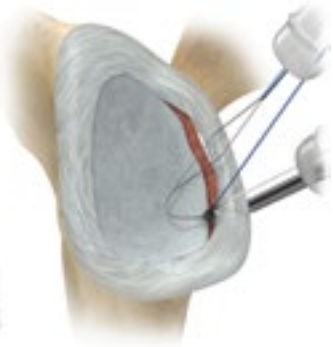

Figure 12

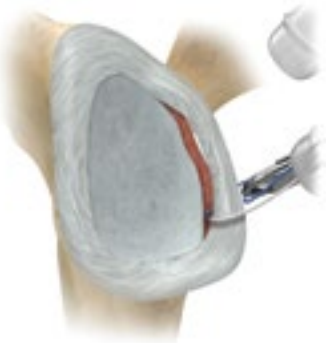

Figure 13

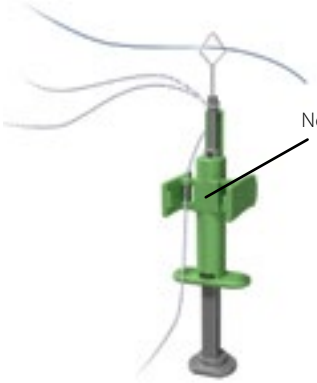

Figure 14

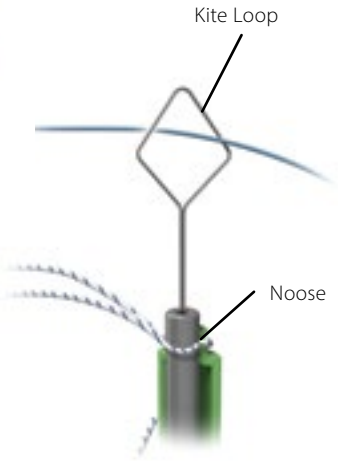

Figure 14a

Passing Suture Through Labrum

To ensure the limbs are not twisted, use a grasper and slide along the solid blue passing strand before and after the strand is passed through the labrum (Figure 11). Isolate the solid **blue** passing strand of the suture assembly, and pass it through tissue at the repair site using a suture passing instrument (Figure 12). Ensure any twists have been eliminated and that both ends of the suture construct are exiting the body through the same portal or incision with no soft tissue bridges (Figure 13).

Tensioning of the ZipLoop Technology

Outside the body, place at least 3 cm of the solid blue passed suture through the Nitinol noose assembly (Figure 14, 14a).

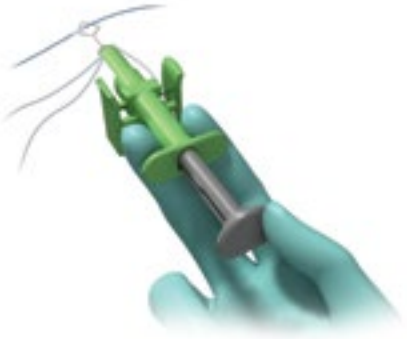

Figure 15

Figure 16

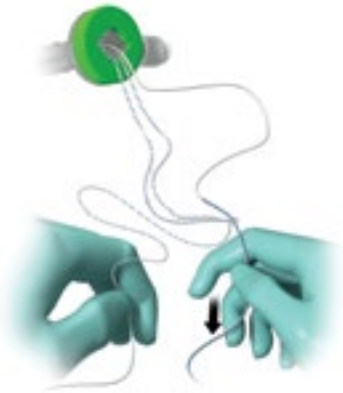

Figure 16a

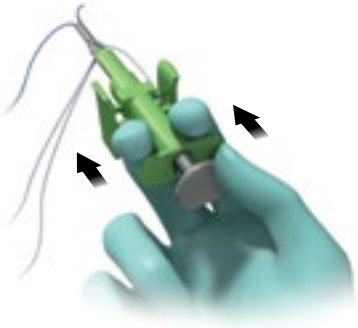

Figure 15a

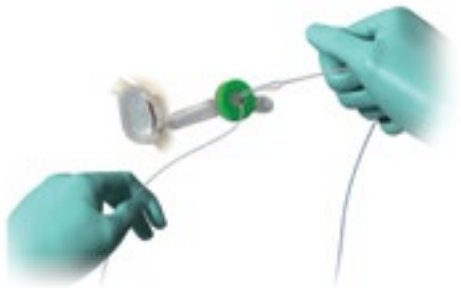

Figure 16b

Tensioning of the ZipLoop Technology (cont.)

Deploy the noose assembly by actuating it like a syringe over the solid blue suture (Figure 15). Once the noose assembly is fully deployed, the solid blue suture is drawn into the grey tip, locking it to the noose assembly (Figure 15a). Once the noose assembly is locked, pull back on the assembly to disengage the noose from the assembly.

The noose will slide over and down the solid blue passing strand until it reaches the repair site (Figures 16, 16a, 16b). If preferred, once the noose has begun its descent down the solid blue passing strand the green assembly may be ignored and tension may be applied directly to the solid blue strand till the noose reaches the repair site.

Note: Apply strong tension to ensure the noose fully closes over tissue. A probe can also be used to assist tightening the noose over the tissue.

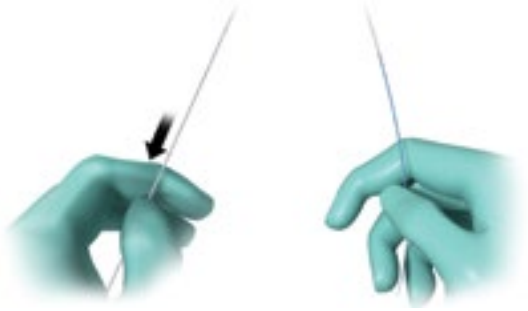

Figure 17

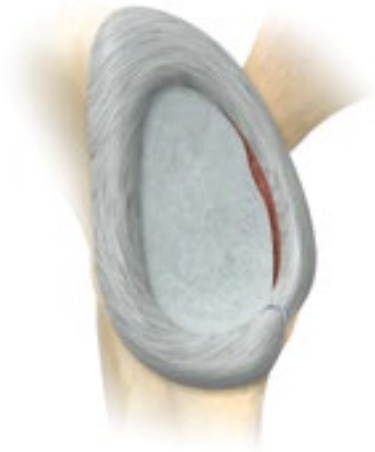

Figure 18

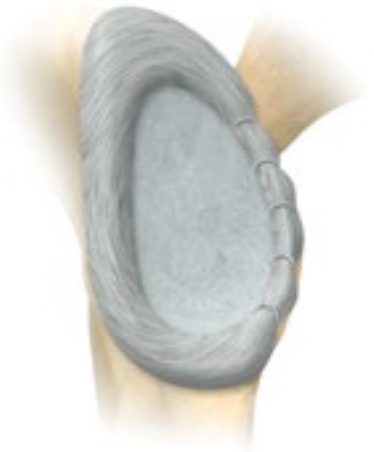

Figure 19

Tensioning of the ZipLoop Technology (cont.)

While maintaining light back tension on the solid blue passing strand with the opposite hand, pull on the blue/white striped tensioning strand to tighten the ZipLoop strand against tissue/repair site (Figure 17).

Note: If a large bite of tissue (capsule) is desired, use a crochet hook or probe to help compress the tissue and firmly tighten the blue/white striped ZipLoop strand to repair site.

Note: It is possible to gain additional tension by seesawing the suture limbs back and forth, but the blue/white striped tensioning strand should always be the last strand tensioned.

Once the blue/white striped ZipLoop strand is fully seated and desired tension is achieved, trim suture tails by cutting as close to flush as possible and continue repair with further anchors as repair necessitates (Figures 18, 19).

Ordering Information

Implants

Part Number	Description
110005198	JuggerKnotless SS Implant
110005199	JuggerKnotless SS Implant 10pk

Instruments

Part Number	Description
110003182	JuggerKnotless Disposable Low Profile Drill Bit
110003172	JuggerKnotless Disposable Kit

Part Number	Description
110017436	JuggerKnotless Reusable Low Profile Fishmouth Guide
110017434	JuggerKnotless Reusable Low Profile Obturator
110017433	JuggerKnotless Reusable Low Profile Trocar
110003181	JuggerKnotless Reusable Low Profile 4-Prong Guide

INDICATIONS
The JuggerKnotless Soft Anchors are indicated for soft tissue reattachment procedures in the shoulder, foot/ankle, elbow, knee, hand/wrist, and hip. Specific indications are as follows:

Shoulder
Acromio-clavicular Separation, Anterior Shoulder Instability Repair, Bankart lesion repair, Biceps tenodesis, Capsule Repair or Capsulolabral Reconstruction, Deltoid Repair, Rotator Cuff Repair, S.L.A.P Lesion Repairs

Foot and Ankle
Achilles Tendon Repair/Reconstruction, Hallux Valgus Reconstruction, Lateral/Medial Stabilization Repairs/Reconstruction, Midfoot/Forefoot Reconstruction/Repairs

Elbow
Biceps Tendon Reattachment, Biceps Tendon Reconstruction, Lateral/Medial Repairs, Lateral Epicondylitis Repair (Tennis Elbow Repair), Ulnar & Radial Collateral Ligament Reconstruction

Knee
Iliotibial Band Tenodesis, Joint Capsule Closure, Lateral/Medial Collateral Ligament Repair, Patellar Ligament Repair, Patellar Tendon Repair, Patellar Realignment/Repair, Posterior Oblique Ligament Repair, VMO Advancement

Hand and Wrist
Collateral Ligament Repair (Gamekeeper's Thumb), Scapholunate Ligament Reconstruction, Tendon Transfers in Phalanx, Volar Plate Reconstruction

Hip
Labral

CONTRAINDICATIONS
1. Infection.
2. Patient conditions including blood supply limitations and insufficient quantity or quality of bone or soft tissue.
3. Patients with mental or neurologic conditions who are unwilling or incapable of following postoperative care instructions or patients who are otherwise unwilling or incapable of doing so.
4. Foreign body sensitivity. Where material sensitivity is suspected, testing is to be completed prior to implantation of the device.

Check for country product clearances and reference product specific instructions for use. For complete product information, including indications, contraindications, warnings, precautions, and potential adverse effects, see the package insert and Biomet's website.

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