

Arthroscopic Shoulder Repair Using the Smith & Nephew KINSA[◊] Suture Anchor



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Introduction

The Smith & Nephew KINSA Suture Anchor for instability (Figure 1) is intended to provide secure fixation of soft tissue to bone. The KINSA Anchor consists of a tap-in, non-absorbable polymer anchor, preloaded with ULTRABRAID[®] Suture (cobraid) and loaded onto a disposable inserter. A self-locking, sliding knot, based on the Smith & Nephew FAST-FIX[®] Meniscal Repair System, is contained in the anchor allowing secure fixation without tying any knots. The design allows the tension placed on the tissue for fixation to be totally independent of the anchor depth. A suture loop reduces the tissue, leaving a low profile repair with no knot stack in the joint.

Patient Preparation

Place the patient in either the beach chair position or the lateral decubitus position.

Typically, the posterior portal is used for arthroscopic visualization. Establish a standard posterior portal at the “soft spot.”

Establish the anterior-superior portal (referred to in this technique as the “non-operative” cannula) in the rotator cuff interval.

Establish the anterior-inferior portal (referred to in this technique as the “operative” cannula) as close as possible to the superior edge of the subscapularis tendon.

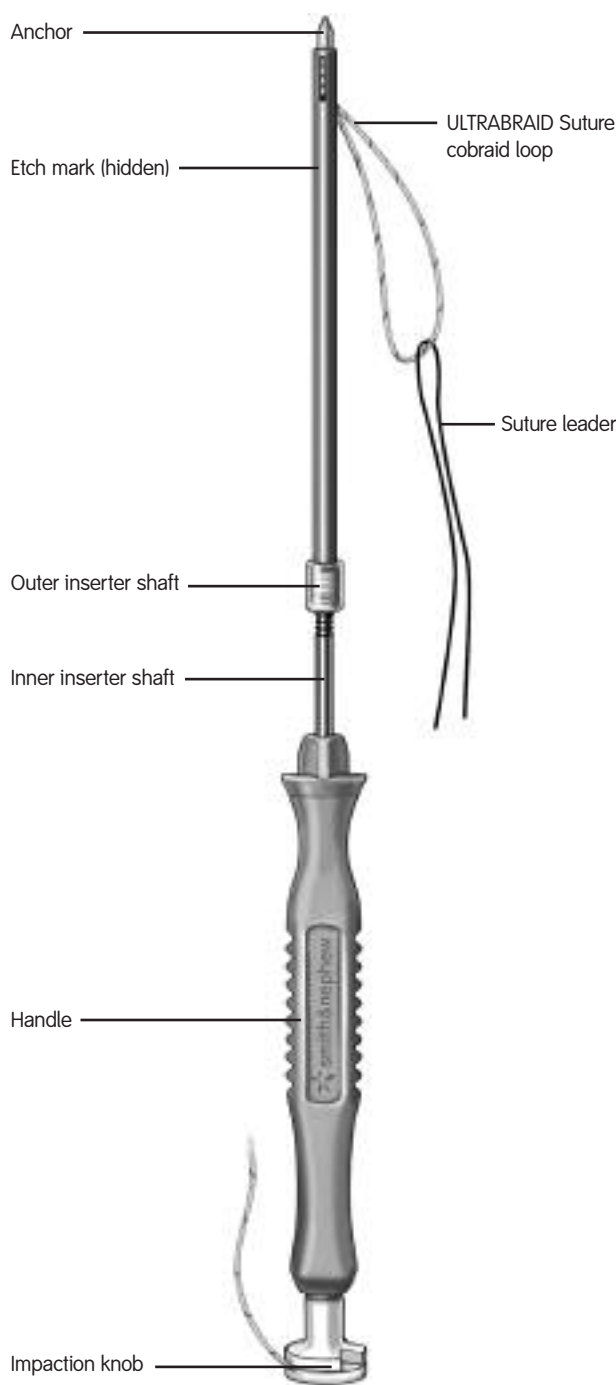


Figure 1

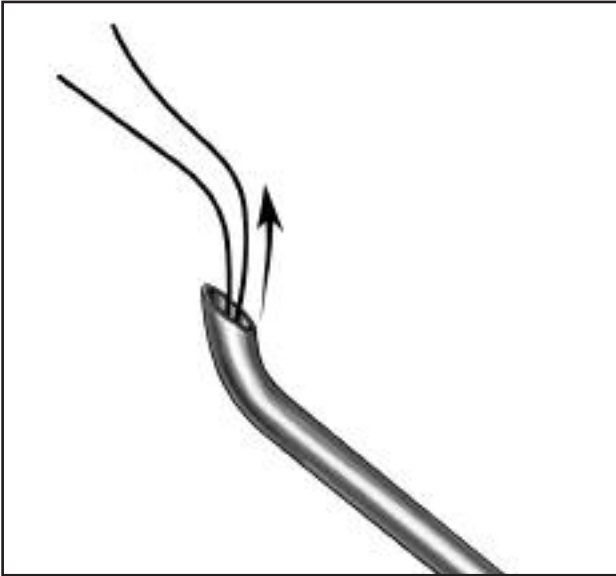


Figure 2



Figure 3



Figure 4

Technique

1. In preparation for the procedure, remove the monofilament from the Smith & Nephew ACCU-PASS[®] Suture Shuttle. Reload the monofilament so that when advanced the tail ends pass through the needle first (Figure 2) or use a preferred method of suture shuttle passage.
2. Place the distal tip of a Smith & Nephew Inline Drill Guide onto the bone at the desired implantation site.
3. Stabilize the guide over the insertion site and advance the Smith & Nephew KINSA[®] Drill Bit until the shoulder on the drill bit reaches the bone surface, or the wide etch mark on the drill bit fills the distal windows of the inline drill guide (Figure 3). Note the drill bit alignment and hole location before removing the drill bit and drill guide. The anchor will need to be inserted on the same alignment and angle.
4. Remove the drill bit and drill guide from the insertion site. Mark the edge of the hole using a preferred method. It is strongly recommended to mark the edge of the hole (Figure 4) because it can be difficult to find later.

5. Insert the suture shuttle down the operative cannula and through the labrum and capsule to be repaired (Figure 5). Advance the tails into the joint space. Use a grasper to retrieve the tails through the non-operative cannula (Figure 6). Hemostat the monofilament tail ends to prevent slippage. Remove the suture shuttle while backing off the monofilament, leaving the monofilament loop exiting the operative cannula.



Figure 5

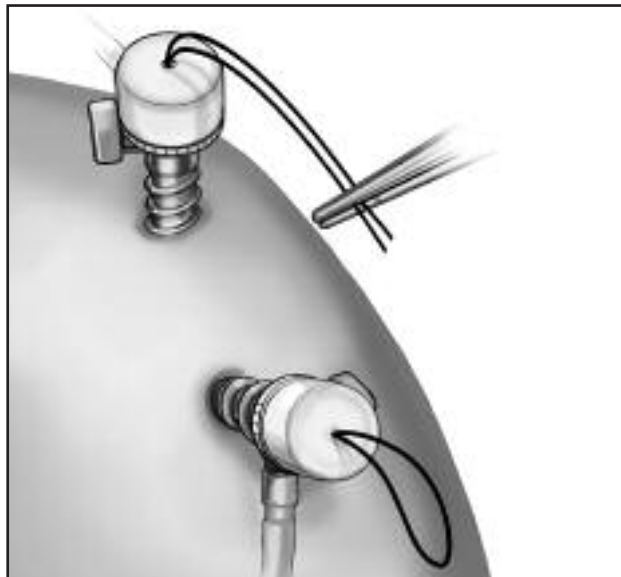


Figure 6

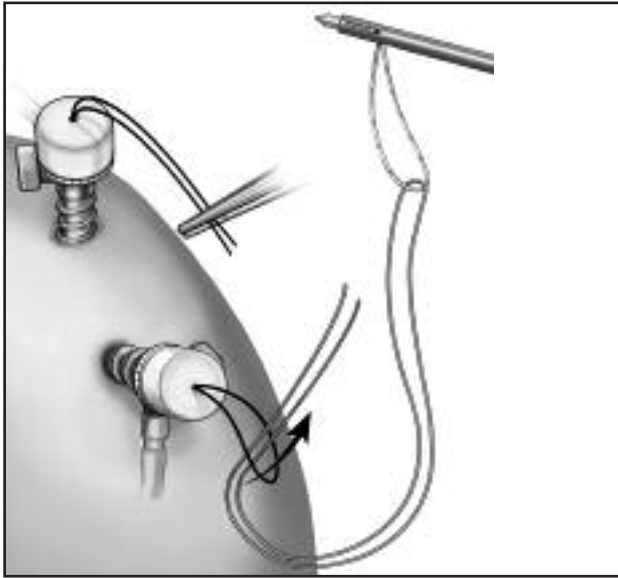


Figure 7

6. Pass six inches of both limbs of the colored suture leader, preloaded on the KINSA[®] Suture Anchor, through the monofilament loop end (Figure 7). Shuttle the colored suture leader through the tissue by pulling the tails of the monofilament out the non-operative cannula (Figure 8). Remove the monofilament.

7. Advance the inserter down the operative cannula while pulling on the colored suture leader to remove slack (Figure 9). Advance until the loop of ULTRABRAID[®] Suture has passed through the soft tissue and is visible on both sides of the tissue (Figure 10).

Note: As you advance the inserter, position it so the slot on the outer shaft faces toward the labrum and away from the glenoid. Avoid twisting the suture.

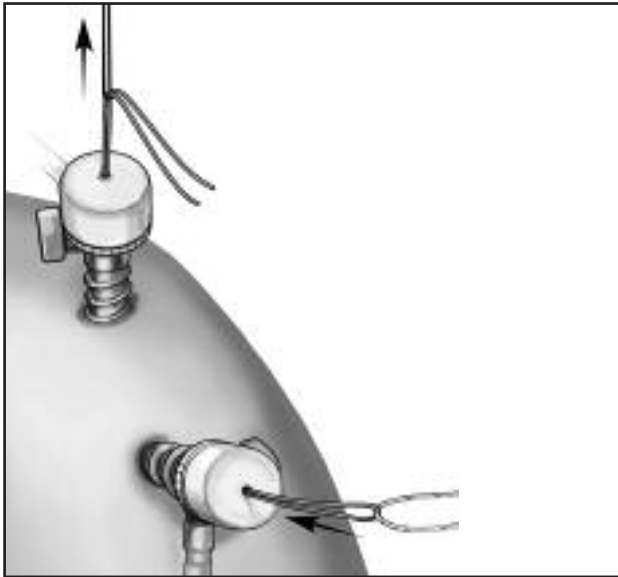


Figure 8

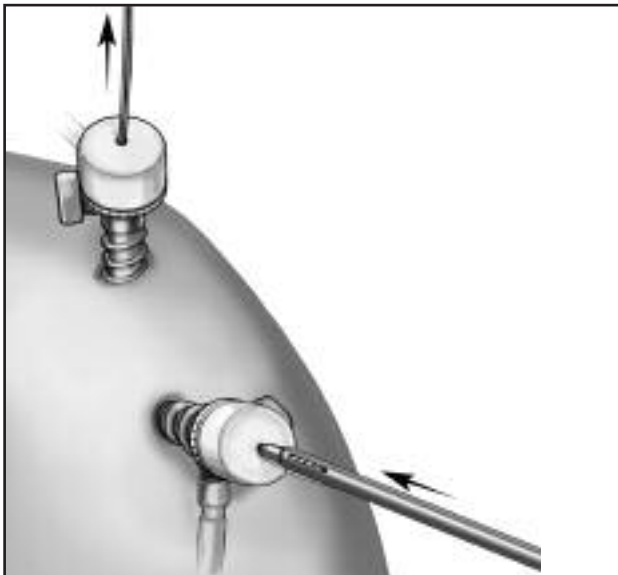


Figure 9

8. Pass the anchor completely through the loop of ULTRABRAID® Suture which has been passed through the soft tissue (Figure 11). Use the colored suture leader to help manipulate the loop.

9. Insert the anchor tip into the drill hole and establish alignment (Figure 12). Maintain axial alignment of the anchor relative to the drilled insertion site. Tap the anchor slowly into the hole until the laser mark on the inner inserter shaft is fully buried beneath the articular surface. Because the laser etch mark is 3 mm above the anchor head, the anchor will be completely embedded in the subchondral bone.

Note: Axial alignment of the anchor to the drilled hole during implantation is imperative for successful implantation.

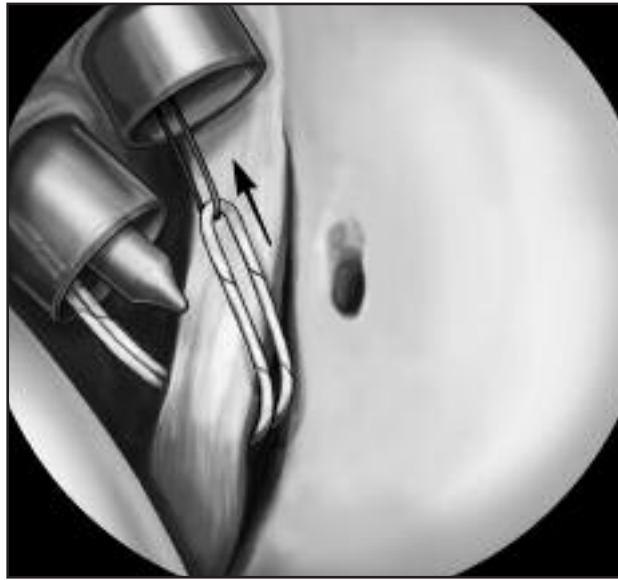


Figure 10



Figure 11



Figure 12



Figure 13

10. Press the inserter against the anchor and pull back the outer inserter shaft, as it is no longer needed (Figure 13).

11. Continue to maintain pressure on the anchor with the inserter and pull back slowly on the impaction knob to shorten the loop that is passed around the tissue (Figure 14). Continue to pull on the impaction knob until the loop reduces tightly around the inner shaft of the inserter. Pull the colored suture leader to help remove any slack from the ULTRABRAID® Suture cobraid loop.

12. Pull back on the inserter to disengage it from the anchor (Figure 15).

13. Continue to pull the impaction knob, advancing the tissue to the repair site, until the desired amount of tissue tension is achieved.

Note: It is important to pause during loop reduction and pull on the colored suture leader to remove any slack from the suture loop.

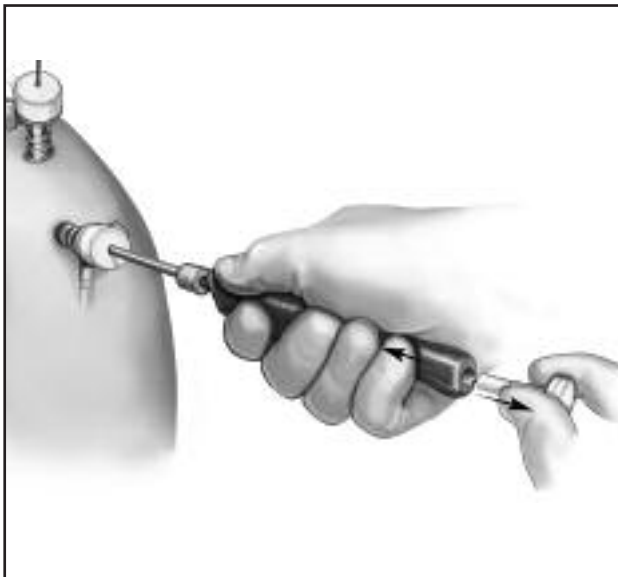


Figure 14



Figure 15

14. Release the ULTRABRAID® Suture by first pulling the suture clockwise. This will “walk” the suture around the knob, following the arrow (Figure 16a), until it slips out of the straight slot (Figure 16b). With the suture clear of the straight slot, reverse direction (Figure 16c), turning counterclockwise, until the suture slips out of the “L”-shaped slot (Figure 16d). Remove and discard the knob and inserter.
15. Remove and discard the colored suture leader. Cut the ULTRABRAID Suture with the Smith & Nephew ELITE® Sliding Suture Cutter. Probe the repair to check the quality of the fixation (Figure 17).

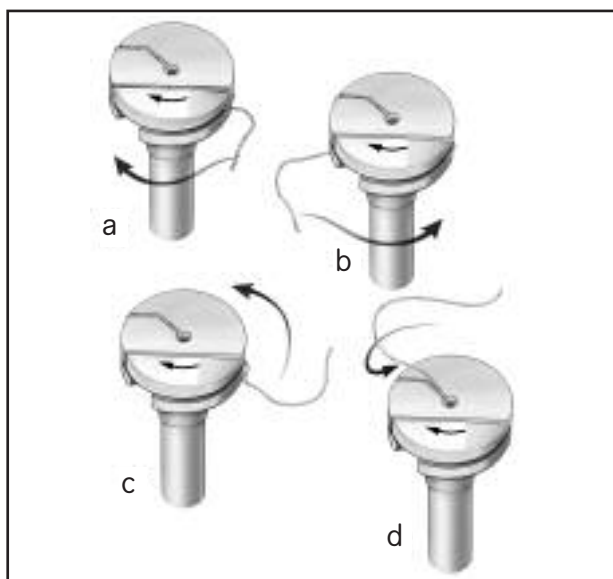


Figure 16

Technical Tips and Pearls

- To aid in verifying the alignment of the drilled hole, after removal of the drill guide and bit, a guide wire can be inserted to relocate the hole and check alignment. Remove the guide wire when verified.
- Do not use excess force when advancing the KINSA® Inserter down the cannula. Gently pull on the colored suture leader only enough to keep tension on the suture and to avoid suture tangling.
- During loop reduction, if one leg of suture tightens faster than the other it is best to stop pulling on the suture. Use a probe or hook to loosen the tight suture leg until its tension is equal to the loose suture leg. Continue with the reduction, repeating the loosening technique as necessary. Uneven loop reduction is sometimes seen when a twist occurs in the suture, making loop reduction difficult.
- The fixation tension can be adjusted by pulling on the ULTRABRAID Suture anytime prior to cutting the suture. A probe can be used to verify the fixation before or after the impaction knob and inserter are removed.
- If bone quality is of concern, remove the impaction knob and inserter early – during the tissue reduction step. Introduce and hold a knot pusher against the fixation site to support the anchor during suture loop reduction.
- Do not remove the inserter prematurely, as it aids in suture sliding. Once disengaged, do not use the inserter as a knot pusher.



Figure 17

Additional Instruction

Prior to performing this technique, consult the Instructions for Use provided with individual components — including indications, contraindications, warnings, cautions, and instructions.

Courtesy of Smith & Nephew, Inc.,
Endoscopy Division

Caution: U.S. Federal law restricts this device to sale by or on the order of a physician.

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