Repairing the rotator cuff

Three arthroscopic techniques for repairing the rotator cuff using ULTRATAPE◊ suture

A shoulder technique guide as described by

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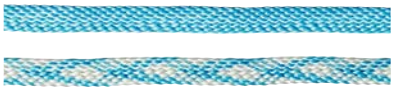
smith&nephew



ULTRATAPE◊
Suture

As described by:
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Background and introduction

Rotator cuff tears are common shoulder injuries that result in significant pain and disability.[1,2]

Healing failure of the surgical repair has been observed upwards of a year following surgery, with 30% or more of repaired cuffs no-longer intact at three-year follow-up.[3,4] The primary objective of rotator cuff repair surgery is to alleviate pain – as well as restore joint stability and function by approximating the area of torn rotator cuff back to the original attachment site to facilitate healing.[5] However, while surgery has demonstrated clinical success, reports of recurrent tears of the rotator cuff persist.

Increasing suture contact area and the uniformity of pressure with the use of tape instead of suture, is potentially beneficial to tendon-to-bone healing and rotator cuff healing rates.[6]

S+N developed ULTRATAPE◊ Suture to offer improved compression.

ULTRATAPE suture is a smooth suture tape that offers a wider construct to reinforce rotator cuff repairs. When compared to traditional #2 suture and competitor suture tape, ULTRATAPE Suture demonstrated in preclinical testing an increase in contact and a lower, more uniformly distributed level of pressure.[7]

Available in loose strands and preloaded on open-architecture HEALICOIL◊ PK and REGENESORB◊ Suture Anchors, construct options are customizable. This allows the surgeon to choose the appropriate implant, suture type and configuration based on each patient's unique pathology to tear pattern, tissue quality and bone quality.

The following technique guide was prepared under the guidance of Scott Trenhaile, 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. **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.**

Techniques for arthroscopic rotator cuff repair

Single row knotless repair featuring ULTRATAPE◊ Suture and FOOTPRINT◊ ULTRA PK Knotless Suture Anchor

Double row knotless repair featuring ULTRATAPE Suture and FOOTPRINT ULTRA PK Knotless Suture Anchor

Double row repair featuring HEALICOIL◊ REGENESORB Suture Anchor preloaded with ULTRATAPE & ULTRABRAID◊ Suture and FOOTPRINT ULTRA PK Knotless Suture Anchor

Rehabilitation protocol:

Small-to-medium rotator cuff tear rehabilitation protocol.

Phase I: (1 – 5 days post-op)

- Shoulder immobilizer
- Scapular AROM exercises
- PROM of shoulder in all planes within tolerable limits

*Large-to-massive tears: PROM for flexion/abduction to 90º and no internal rotation. External rotation as tolerated for 6 weeks post-op.

Phase II: (5 days – 4 weeks post-op)

- Shoulder immobilizer worn continually except with therapy
- PROM to 140º and other planes within tolerable limits
- Initiate joint mobilizations to the glenohumeral, acromio-clavicular, scapulothoracic joints

*Large-to-massive tears: PROM for flexion/abduction to 90º and no internal rotation. External rotation as tolerated for 6 weeks post-op. At 2 weeks post-op begin gentle internal rotation in scapular plane.

Phase III: (4 weeks – 10 weeks post-op)

- Shoulder immobilizer discontinued at 6 weeks post-op
- Active assisted range of motion initiated 4.5 weeks post-op; active range of motion at 6 weeks post-op
- Isometric strengthening with elbow at 90º in all planes
- Light resistance strengthening (i.e. resistance bands) at 8 weeks post-op

*Large-to-massive tears: Begin active assisted range of motion and progress to active range of motion at 8 weeks. Strengthening begins with submaximal pain-free isometrics in all planes.

Phase IV: (10+ weeks post-op)

- Progressive resistance exercises in all shoulder planes
- Begin sport/work-specific training

*Large-to-massive tears: Range of motion unrestricted, initiate progressive resistance training. Begin sport/work-specific training at 14-16 weeks post-op.

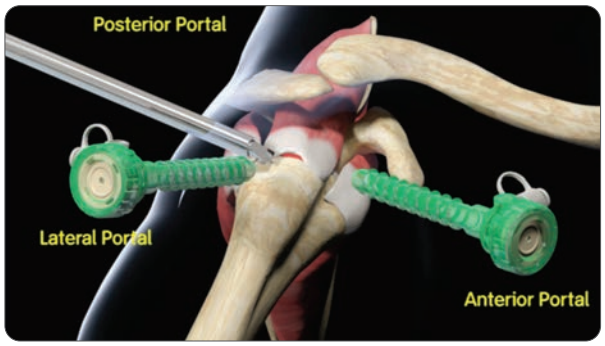
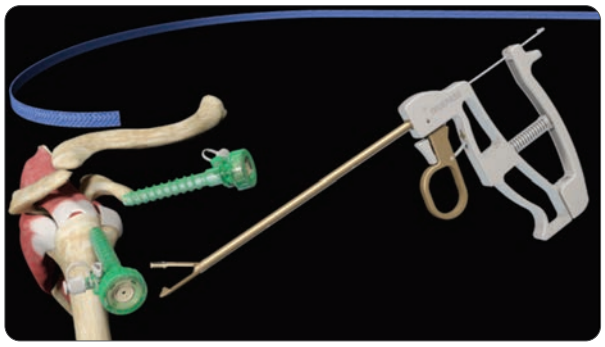


Figure 1



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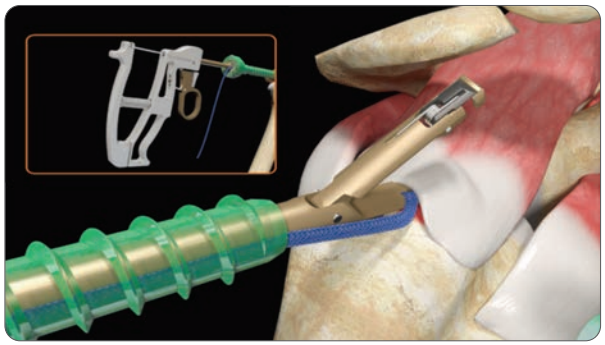


Figure 4

Single row knotless repair featuring ULTRATAPE◊ Suture and FOOTPRINT◊ ULTRA PK Knotless Suture Anchor

Patient positioning and portal placement

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

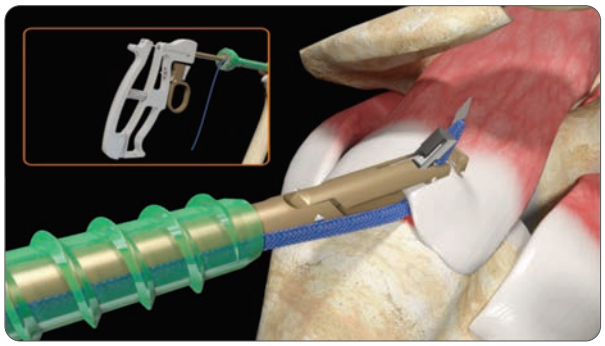
In addition to the standard posterior viewing portal, two portals are used in this technique: anterior portal for suture management and a lateral portal for bursectomy, suture passing and anchor placement. (**Figure 1**)

Preparation

Perform a bursectomy and assess the mobility and nature of the tear.

Suture passing

1. In order to create an inverted mattress suture, load one limb of ULTRATAPE Suture into the lower jaw of the TRUEPASS Self-Capture Suture Passer. (**Figure 2**)
   a. Close the jaws of the instrument and introduce through the lateral portal. (**Figure 3**)
   b. Position the jaws of the TRUEPASS Suture Passer on the anterior portion of the tendon to be repaired. (**Figure 4**)



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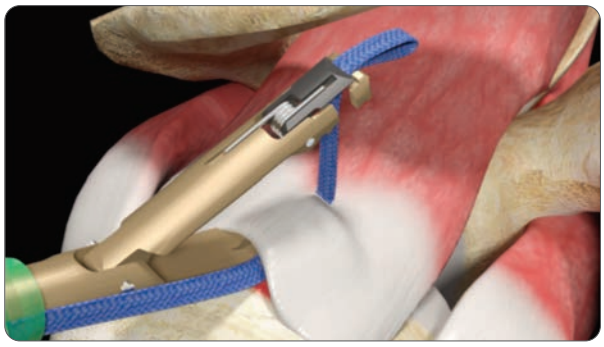

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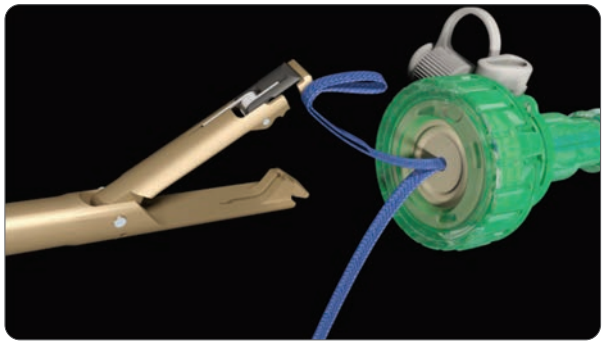

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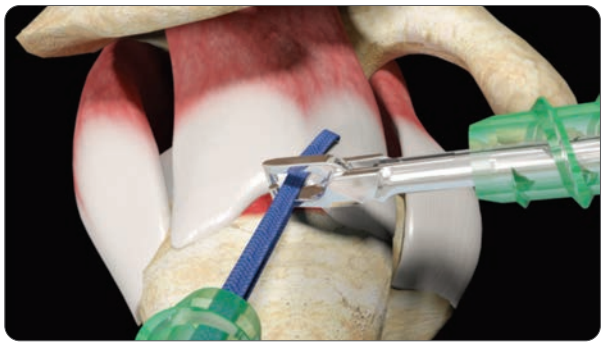

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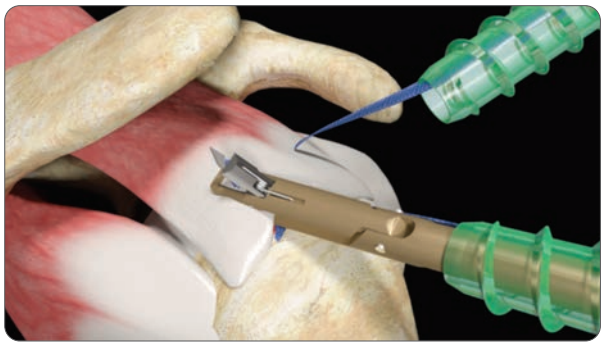

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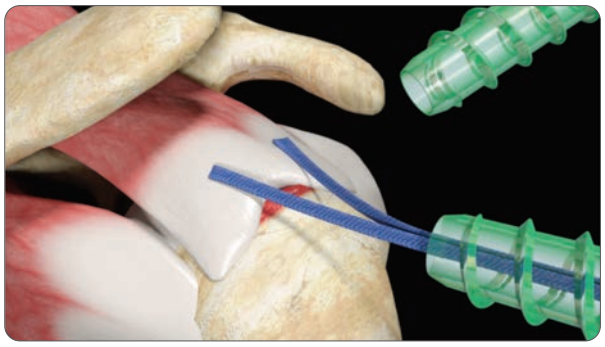
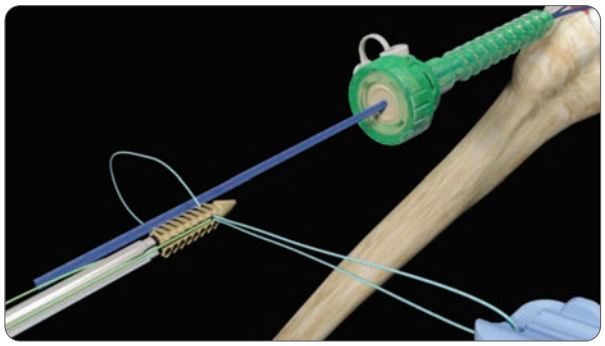


Figure 10

   c. Actuate the device by squeezing and releasing the rear handle to pass and retrieve the ULTRATAPE◊ Suture in one motion. (The ULTRATAPE Suture will remain caught in the self-capture door in the upper jaw.) (**Figures 5, 6**)
   d. Close the jaws of the TRUEPASS Suture Passer and withdraw the device back out of the lateral portal.
   e. Unload the ULTRATAPE Suture from the TRUEPASS Suture Passer by pulling out of the small window on the right-hand side of the instrument's upper jaw. (**Figure 7**)
2. Adjust the lengths of ULTRATAPE Suture limbs and, using the suture-loop grasper, shuttle the passed limb to the anterior portal and out of the way. (**Figure 8**)
3. Repeat the first passing step, now passing the ULTRATAPE Suture through the more posterior portion of the tendon to be repaired. (**Figure 9**)
4. Using the suture-loop grasper down the lateral portal, retrieve the ULTRATAPE Suture limb exiting out of the anterior portal and shuttle back through the lateral portal. (An inverted mattress stitch has now been created.) (**Figure 10**)



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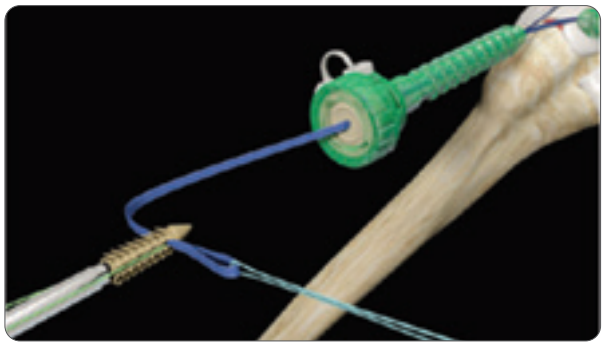

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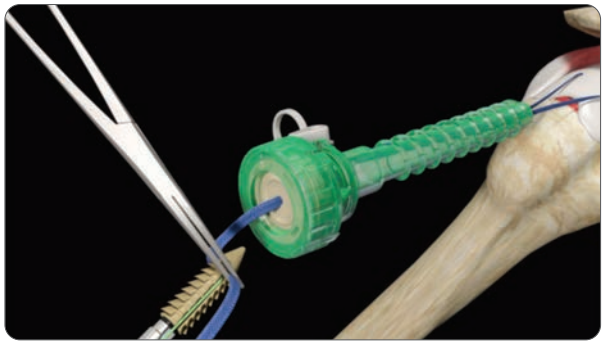

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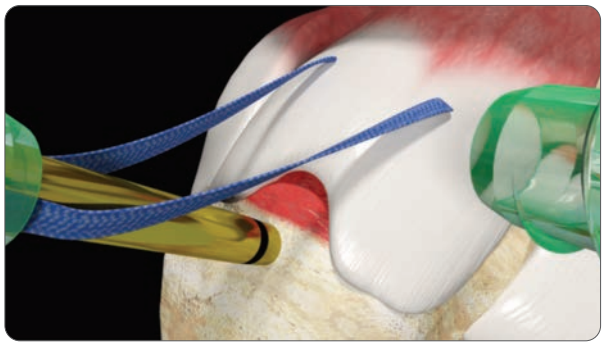
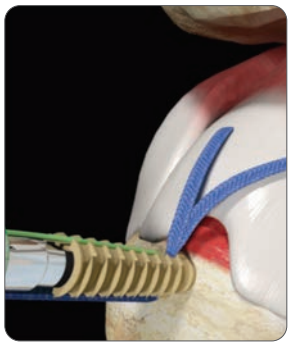


Figure 14

Figure 15



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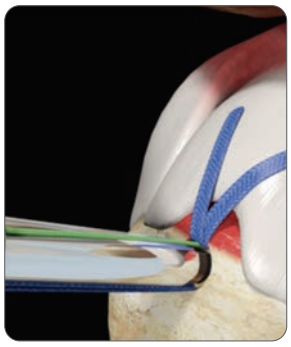


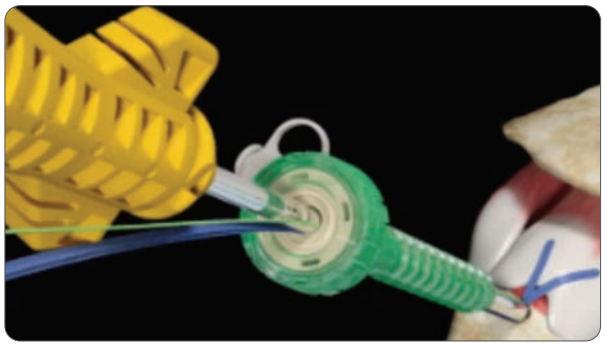
Figure 17

Suture loading and pilot hole preparation

5. Outside of the shoulder, load both limbs of ULTRATAPE◊ Suture into the FOOTPRINT◊ ULTRA PK Knotless Suture Anchor eyelet using the attached threader loop. (**Figures 11, 12**)
6. Clamp a haemostat over the ULTRATAPE Suture to hold in place, while the pilot hole is created. (**Figure 13**)
7. Introduce the 3.8mm gold tapered awl through the lateral portal and create a pilot hole on the anterior lateral aspect of the greater tuberosity. (**Figure 14**)
   a. Tap to ensure the black laser line on the awl is flush with the bone.
   b. Remove the awl.

Anchor insertion

8. Remove the hemostat, and, taking up a small amount of slack from the ULTRATAPE◊ limbs, introduce the FOOTPRINT◊ ULTRA PK Knotless Suture Anchor through the lateral portal, taking care not to twist the sutures. (**Figure 15**)
   a. Position the anchor over the prepared pilot hole – align the eyelet so that it faces the tendon where the suture limbs enter the anchor. (**Figure 16**)
   b. Using a mallet, tap the FOOTPRINT ULTRA PK Knotless Suture Anchor into the pilot hole, ensuring that the black laser line is flush with the bone. (**Figure 17**)



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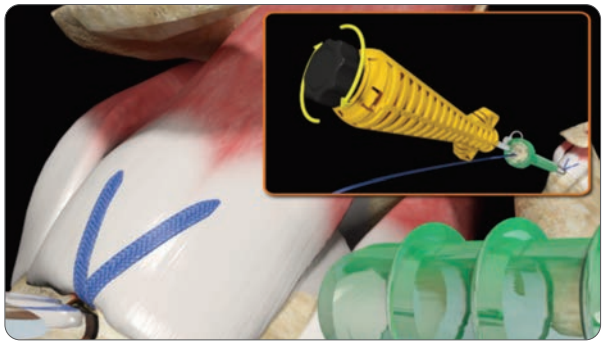

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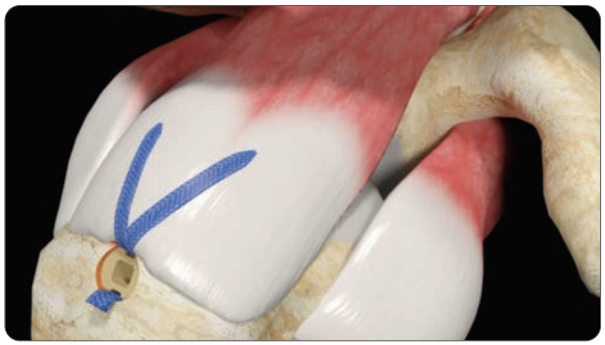


Figure 21

c. Release the green stay-suture from the inserter cleats, slide out of the FOOTPRINT◊ ULTRA PK Knotless Suture Anchor and discard. (**Figure 18**)

d. Maintain light downward pressure on the anchor inserter while individually tensioning the limbs of ULTRATAPE◊ Suture through the FOOTPRINT ULTRA PK Knotless Suture Anchor until desired repair tension is achieved. (**Figure 19**)

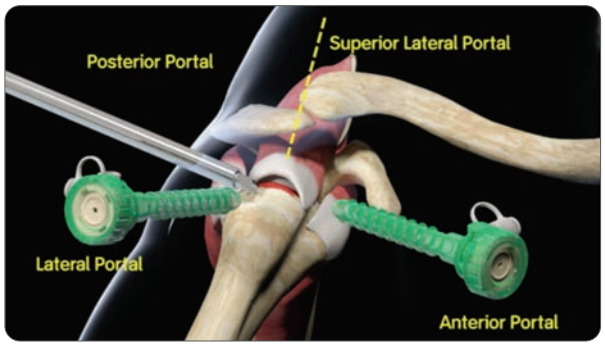
e. Keeping light downward pressure on the inserter, rotate the inserter knob clockwise to deploy the inner locking screw. Rotate until a loud click can be heard. (**Figure 20**)

f. Rotate the inserter knob one quarter turn counterclockwise – this allows for easier separation of the anchor from the inserter.

g. Remove the inserter.

Completing the repair

9. Cut the excess limbs of ULTRATAPE Suture with the Smith+Nephew Flush Suture Cutter. (**Figure 21**)



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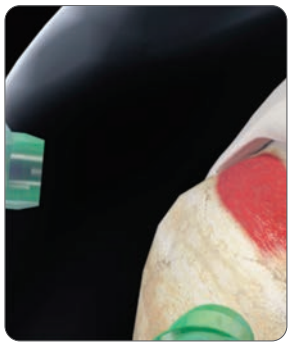

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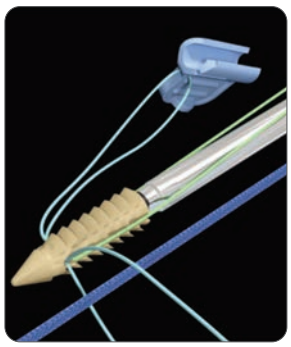

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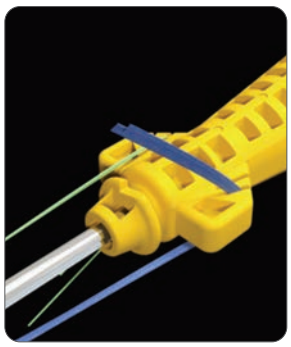

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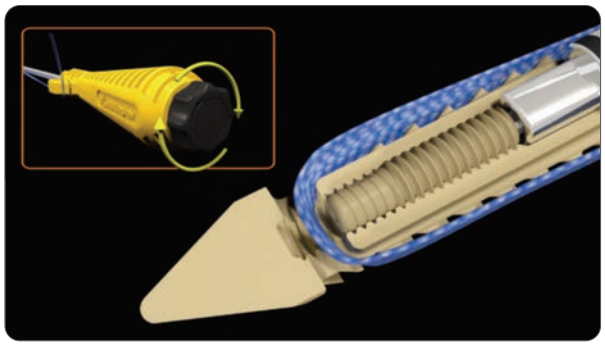


Figure 6

Double row knotless repair featuring ULTRATAPE◊ Suture and FOOTPRINT◊ ULTRA PK Knotless Suture Anchor

Patient positioning and portal placement

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

In addition to the standard posterior viewing portal, three portals are used in this technique: anterior portal for suture management, lateral portal for bursectomy, suture passing and lateral row anchor insertion; and superior lateral portal for medial row anchor insertion. (**Figure 1**)

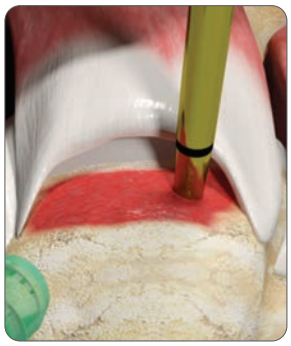
Preparation

Perform a bursectomy and assess the mobility and nature of the tear. (**Figure 2**)

Anchor preparation (Medial row)

1. Preload two FOOTPRINT ULTRA PK Knotless Suture Anchors (to be placed in medial location) with ULTRATAPE Suture. (**Figure 3**)
    a. Release the attached threader loop from the inserter and pass one limb of ULTRATAPE Suture through anchor eyelet. (**Figure 4**)
    b. Ensure both limbs of ULTRATAPE Suture are of equal length and fix them over the cleats on the inserter handle. (**Figure 5**)
    c. Remove and discard the green stay-suture.
    d. Rotate the inserter knob clockwise to deploy the inner locking screw. Rotate until a loud click can be heard. (**Figure 6**)
    e. Rotate the inserter knob one quarter turn counterclockwise – this allows for easier separation of the anchor from the inserter post-insertion. (**Figure 7**)
2. Repeat the previous steps and load a second FOOTPRINT ULTRA PK Knotless Suture Anchor in the same way.

Figure 7



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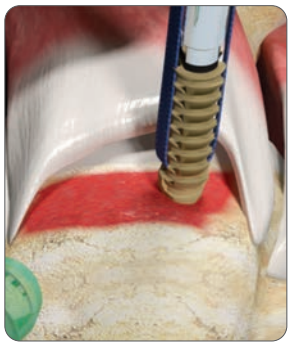

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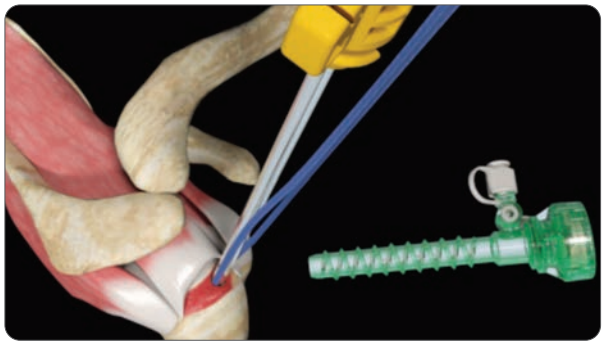

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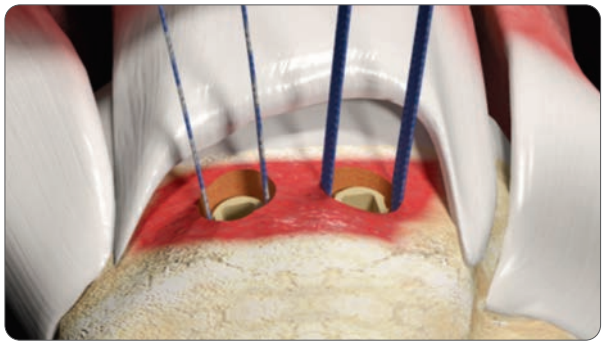


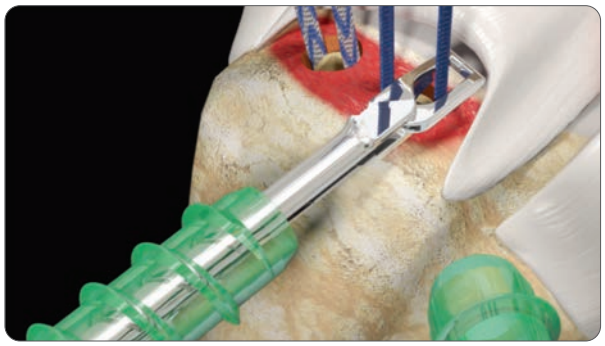
Figure 11

Pilot hole preparation

3. Introduce the 3.8mm gold tapered awl through the superior lateral portal and create the pilot hole in the anterior medial aspect of the greater tuberosity. (**Figure 8**)
   a. Tap to ensure the black laser line on the awl is flush with the bone.
   b. Remove the awl.

Anchor insertion (Medial row)

4. Introduce the FOOTPRINT◊ ULTRA PK Knotless Suture Anchor through the superior lateral portal.
   a. Align the eyelet parallel to the rotator cuff tendon. (**Figure 9**)
   b. Using a mallet, tap the FOOTPRINT ULTRA PK Knotless Suture Anchor into the pilot hole, ensuring that the black laser line is flush with the bone.
   c. Remove the two limbs of ULTRATAPE◊ Suture from the cleats on the inserter handle. (**Figure 10**)
   d. Remove the inserter.
5. Repeat the previous steps and insert the second FOOTPRINT ULTRA PK Knotless Suture Anchor in the posterior medial aspect of the greater tuberosity. (**Figure 11**)



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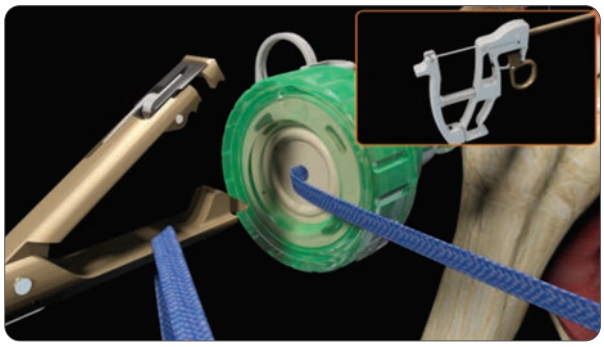

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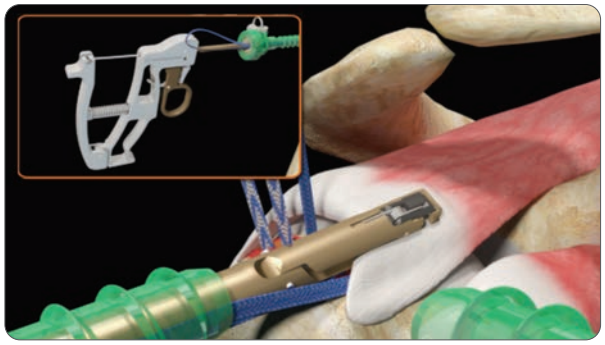

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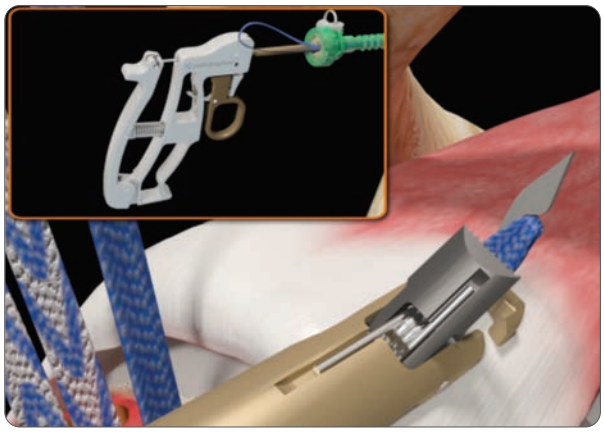
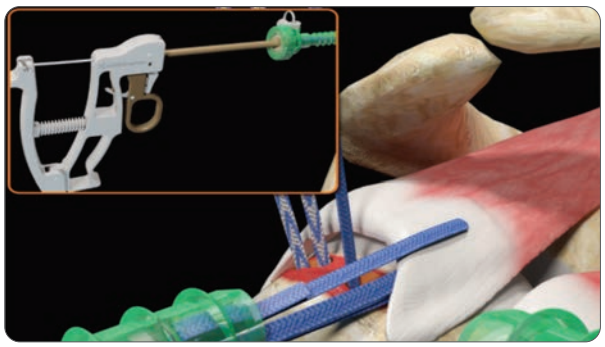


Figure 15

Suture passing

Using a suture-loop grasper, retrieve one limb of ULTRATAPE◊ Suture from the anterior medial anchor and pull out through the lateral portal. (**Figure 12**)

6. Outside of the joint, load the limb of ULTRATAPE Suture into the lower jaw of the TRUEPASS Suture Passer.
    a. Close the jaws of the instrument and introduce through the lateral portal. (**Figure 13**)
    b. Position the jaws of the TRUEPASS Suture Passer on the anterior medial aspect of the tendon. (**Figure 14**)
    c. Actuate the device by squeezing and releasing the rear handle to pass and retrieve the ULTRATAPE Suture in one motion. (The ULTRATAPE Suture will remain caught in the self-capture door in the upper jaw.) (**Figure 15**)
    d. Close the jaws of the TRUEPASS Suture Passer and withdraw the device out of the lateral portal. (**Figure 16**)
    e. Unload the ULTRATAPE Suture from the TRUEPASS Suture Passer by pulling out of the small window on the right-hand side of the instrument's upper jaw. (**Figure 17**)
    f. Using the suture-loop grasper, shuttle the passed limb of ULTRATAPE Suture to the anterior portal out of the way.



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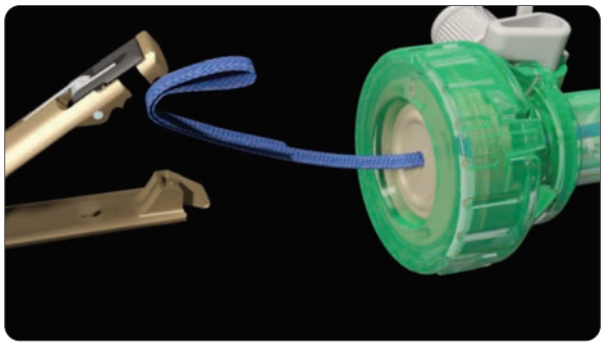

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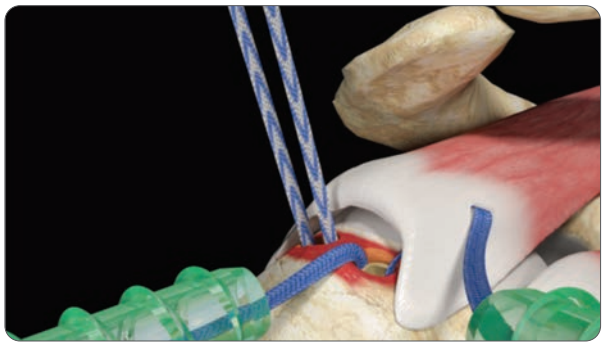

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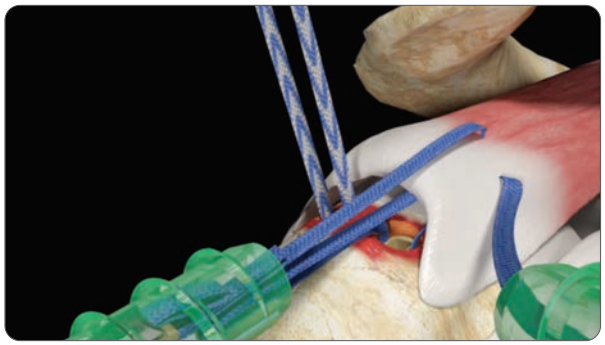

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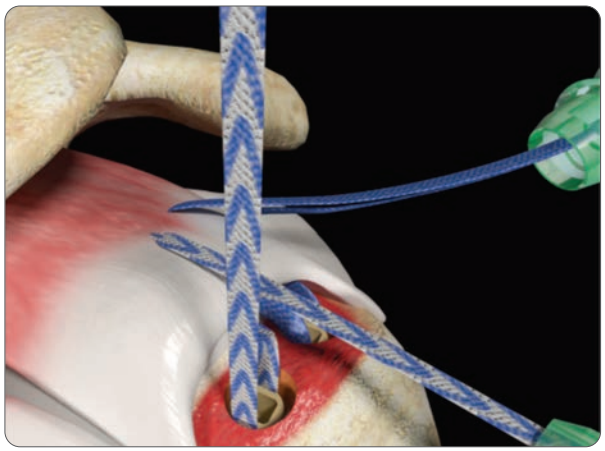

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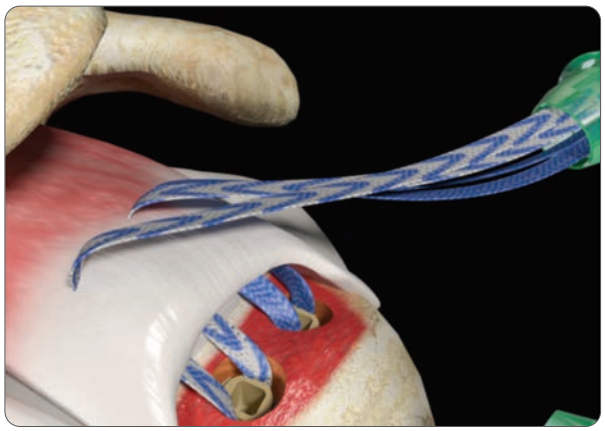


Figure 21

7. Using the suture-loop grasper down the lateral portal, retrieve the second limb of ULTRATAPE◊ Suture from the anterior medial anchor. (**Figure 18**)
   a. Pass the ULTRATAPE Suture through the tendon adjacent to the first passed ULTRATAPE Suture limb. (**Figure 19**)
   b. Shuttle suture limb to the anterior portal.
8. Repeat the previous steps, passing the two ULTRATAPE Sutures from the posterior medial anchor – all four suture limbs should now be passed and exiting the anterior portal. (**Figures 20, 21**)

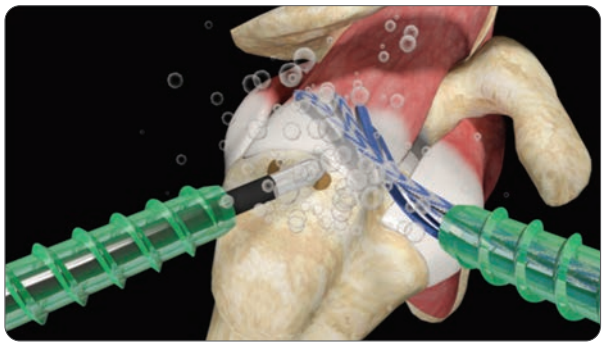
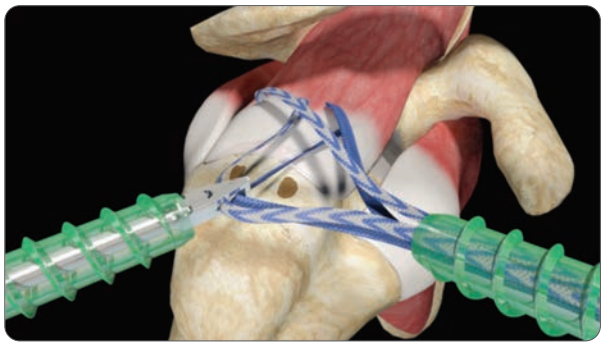


Figure 22



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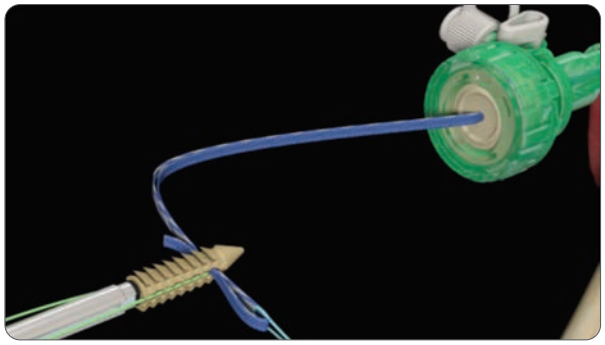


Figure 24

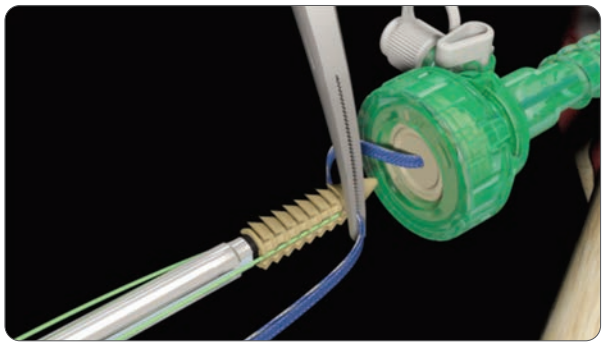


Figure 25

Suture loading and pilot hole preparation (Lateral row)

9. Introduce the AMBIENT◊ SUPER TURBOVAC◊ 90º Probe through the lateral portal and mark on the lateral aspect of the greater tuberosity the two points where the FOOTPRINT◊ ULTRA PK Knotless Suture Anchors will be inserted. (**Figure 22**)
10. Using the suture-loop grasper through the lateral portal, retrieve the most anterior limb of ULTRATAPE◊ Suture from each of the medially placed FOOTPRINT ULTRA PK Knotless Suture Anchors. Bring these two limbs back out of the lateral portal. (**Figure 23)**
11. Outside of the shoulder, load both limbs of ULTRATAPE Suture into the FOOTPRINT ULTRA PK Knotless Suture Anchor eyelet using the attached threader loop. (**Figure 24**)
12. Clamp a haemostat over the ULTRATAPE Suture to hold in place, while the pilot hole is created. (**Figure 25**)
13. Introduce the 3.8mm gold tapered awl through the lateral portal and create a pilot hole on the anterior lateral aspect of the greater tuberosity, using the RF marks to guide placement. (**Figure 26**)
    a. Tap to ensure the black laser line on the awl is flush with the bone.
    b. Remove the awl.

Figure 26

Figure 27

Figure 28

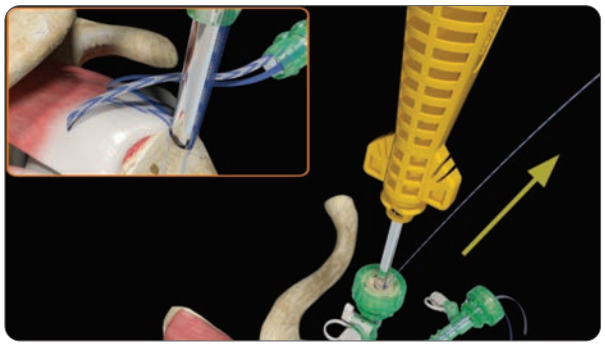


Figure 29

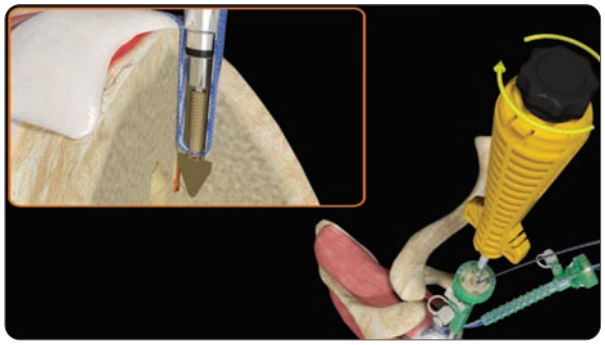


Figure 30

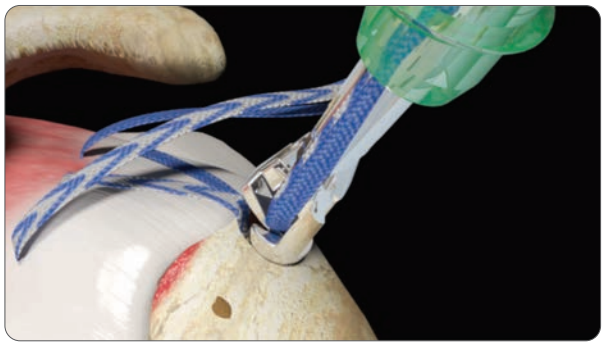


Figure 32

Anchor insertion (Lateral row)

14. Remove the haemostat, and, taking up a small amount of slack from the ULTRATAPE◊ Sutures introduce the FOOTPRINT◊ ULTRA PK Knotless Suture Anchor through the lateral portal, taking care not to twist the sutures.
    a. Position the anchor over the prepared pilot hole – align the eyelet so that it faces the tendon where the suture limbs enter the anchor. (**Figure 27**)
    b. Using a mallet, tap the FOOTPRINT ULTRA PK Knotless Suture Anchor into the pilot hole, ensuring that the black laser line is flush with the bone. (**Figure 28**)
    c. Release the green stay-suture from the inserter cleats, slide out of the FOOTPRINT ULTRA PK Knotless Suture Anchor and discard.
    d. Maintain light downward pressure on the anchor inserter while individually tensioning the limbs of ULTRATAPE Suture through the FOOTPRINT ULTRA PK Knotless Suture Anchor until desired repair tension is achieved. (**Figure 29**)
    e. Keeping light downward pressure on the inserter, rotate the inserter knob clockwise to deploy the inner locking screw. Rotate until a loud click can be heard. (**Figure 30**)
    f. Rotate the inserter knob one quarter turn counterclockwise – this allows for easier separation of the anchor from the inserter. (**Figure 31**)
    g. Remove the inserter.

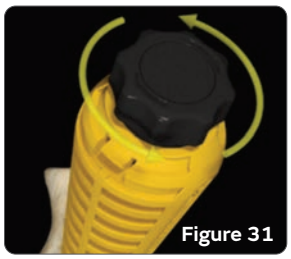


Figure 31

Completing the repair

15. Cut the excess limbs of ULTRATAPE Suture with the Smith+Nephew Flush Suture Cutter. (**Figure 32**)
16. Repeat the previous sequence of steps, inserting a final FOOTPRINT ULTRA PK Knotless Suture Anchor in the posterior lateral aspect of the greater tuberosity to complete the repair. (**Figure 33**)

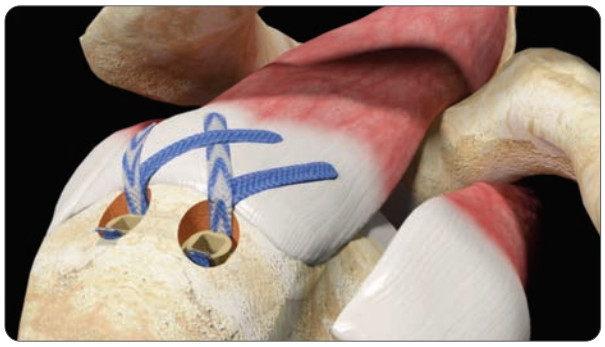


Figure 33

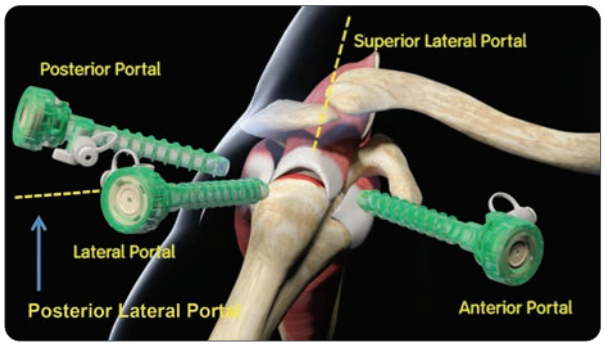


Figure 1

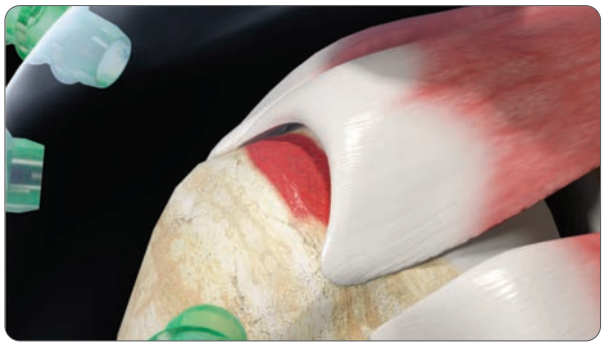
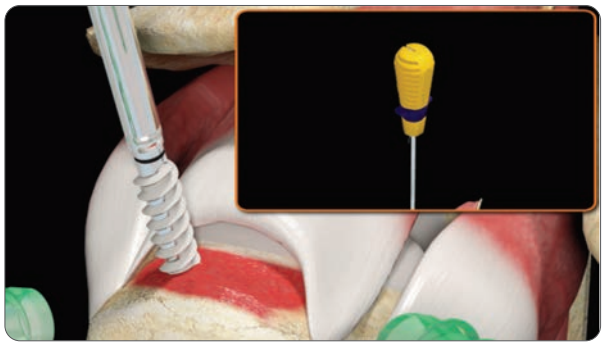


Figure 2

Figure 3



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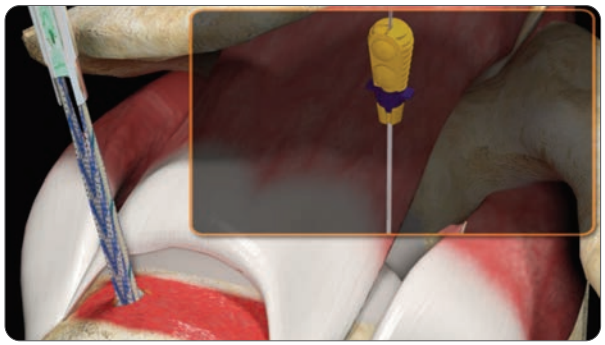


Figure 5

Double row repair featuring HEALICOIL◊ REGENESORB◊ Suture Anchors preloaded with ULTRATAPE◊ and ULTRABRAID◊ Suture and FOOTPRINT◊ ULTRA PK Knotless Suture Anchors

Patient positioning and portal placement

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

In addition to the standard posterior viewing portal, four portals are used in this technique: anterior portal for suture management; lateral portal for bursectomy, suture passing and lateral row anchor placement; superior lateral portal for medial row anchor placement; and a posterior lateral portal for enhanced viewing during the repair steps. (**Figure 1**)

Preparation

Perform a bursectomy and assess the mobility and nature of the tear. (**Figure 2**)

Pilot hole preparation and anchor insertion

1. Introduce the HEALICOIL REGENESORB Threaded Dilator through the superior lateral portal and create a pilot hole in the posterior medial aspect of the greater tuberosity by engaging all threads. (**Figure 3**)
   a. Unscrew and remove the dilator.
2. Introduce the HEALICOIL REGENESORB Suture Anchor through the superior lateral portal and insert by screwing into the pilot hole until the black laser line on the inserter is flush with the surface of the bone. (**Figure 4**)
   a. Remove the anchor from the inserter. (**Figure 5**)

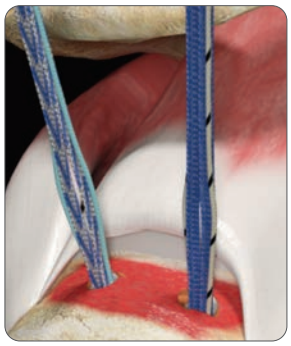
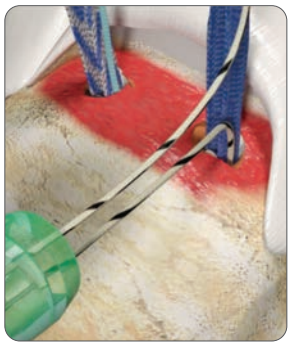


Figure 6



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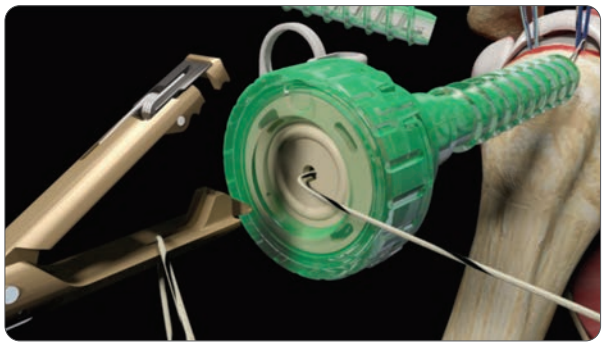


Figure 8

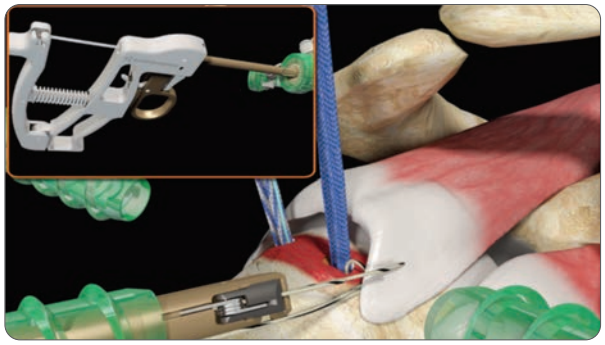


Figure 9

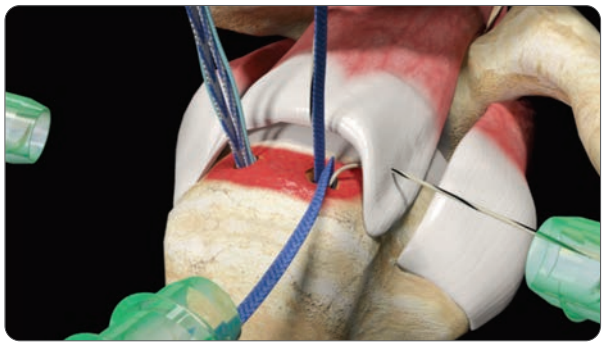
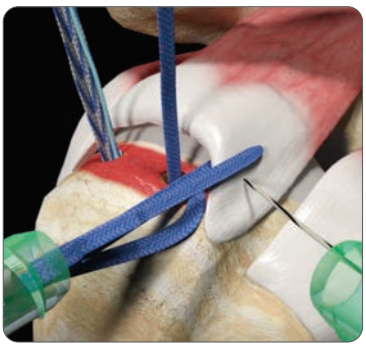


Figure 10

3. Repeat the previous two steps to insert a second HEALICOIL◊ REGENESORB◊ Suture Anchor in the anterior medial aspect of the greater tuberosity. (All limbs of ULTRATAPE◊ and ULTRABRAID◊ Suture should be exiting through the superior lateral portal.) (**Figure 6**)
4. Using a suture-loop grasper through the lateral portal, retrieve one limb of ULTRABRAID Suture from the anterior medial anchor. (**Figure 7**)
5. Outside of the joint, load the limb of ULTRABRAID Suture into the lower jaw of the TRUEPASS Suture Passer. (**Figure 8**)
   a. Close the jaws of the instrument and introduce through the lateral portal.
   b. Position the jaws of the TRUEPASS Suture Passer on the anterior medial aspect of the tendon.
   c. Actuate the device by squeezing and releasing the rear handle to pass and retrieve the ULTRABRAID Suture in one motion. (The suture limb will remain caught in the self-capture door in the upper jaw.)
   d. Close the jaws of the TRUEPASS Suture Passer and withdraw the device out of the lateral portal. (**Figure 9**)
   e. Unload the ULTRABRAID Suture from the TRUEPASS Suture Passer by pulling out of the small window on the right-hand side of the instrument's upper jaw.
6. Using the suture-loop grasper, shuttle the passed limb of ULTRABRAID Suture to the anterior portal.
7. Through the lateral portal, retrieve and pass a limb of ULTRATAPE Suture from the anterior medial anchor through the anterior medial aspect of the tendon (slightly more medial to the previously passed ULTRABRAID Suture). (**Figure 10, 11**)
8. Using the suture-loop grasper, shuttle the passed limb of ULTRATAPE Suture to the anterior portal.
9. Repeat the previous step, passing the second limb of ULTRATAPE Suture adjacent to the first. Both limbs of ULTRATAPE Suture and one limb of ULTRABRAID Suture from this anchor are now passed. (All limbs of suture from this anchor are now exiting the anterior portal.) (**Figure 12**)



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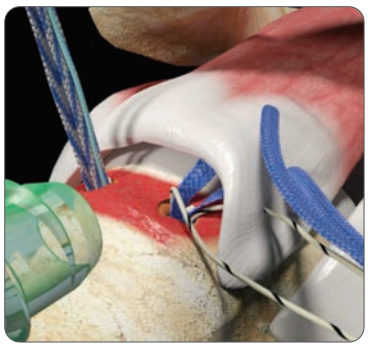

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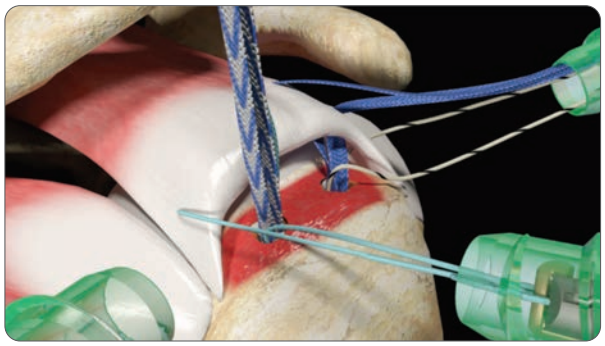

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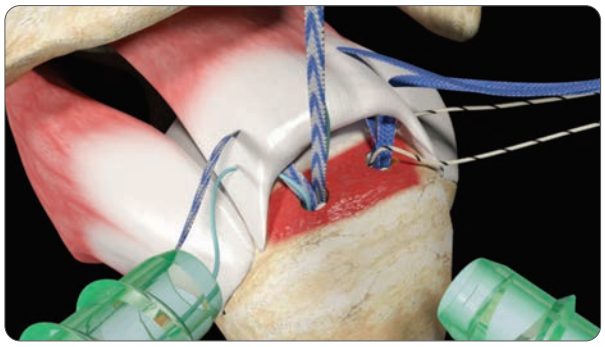


Figure 14

Suture passing (Posterior medial anchor)

10. Using a suture-loop grasper through the lateral portal, retrieve one limb of ULTRABRAID◊ Suture from the posterior medial anchor.
11. Pass the ULTRABRAID Suture through the posterior medial aspect of the tendon using the TRUEPASS Suture Passer, and shuttle to the posterior portal. (**Figure 13**)
12. Through the lateral portal, retrieve and pass an ULTRATAPE◊ Suture from the posterior medial anchor through the posterior medial aspect of the tendon (slightly more medial to the previously passed ULTRABRAID Suture). (**Figure 14**)
13. Using the suture-loop grasper, shuttle the passed limb of ULTRATAPE Suture to the posterior portal.
14. Pass the final limb of ULTRATAPE Suture adjacent to the first. Both limbs of ULTRATAPE Suture and one limb of ULTRABRAID Suture from this anchor are now passed. (All limbs of suture from this anchor are now exiting the posterior portal.) (**Figure 15**)

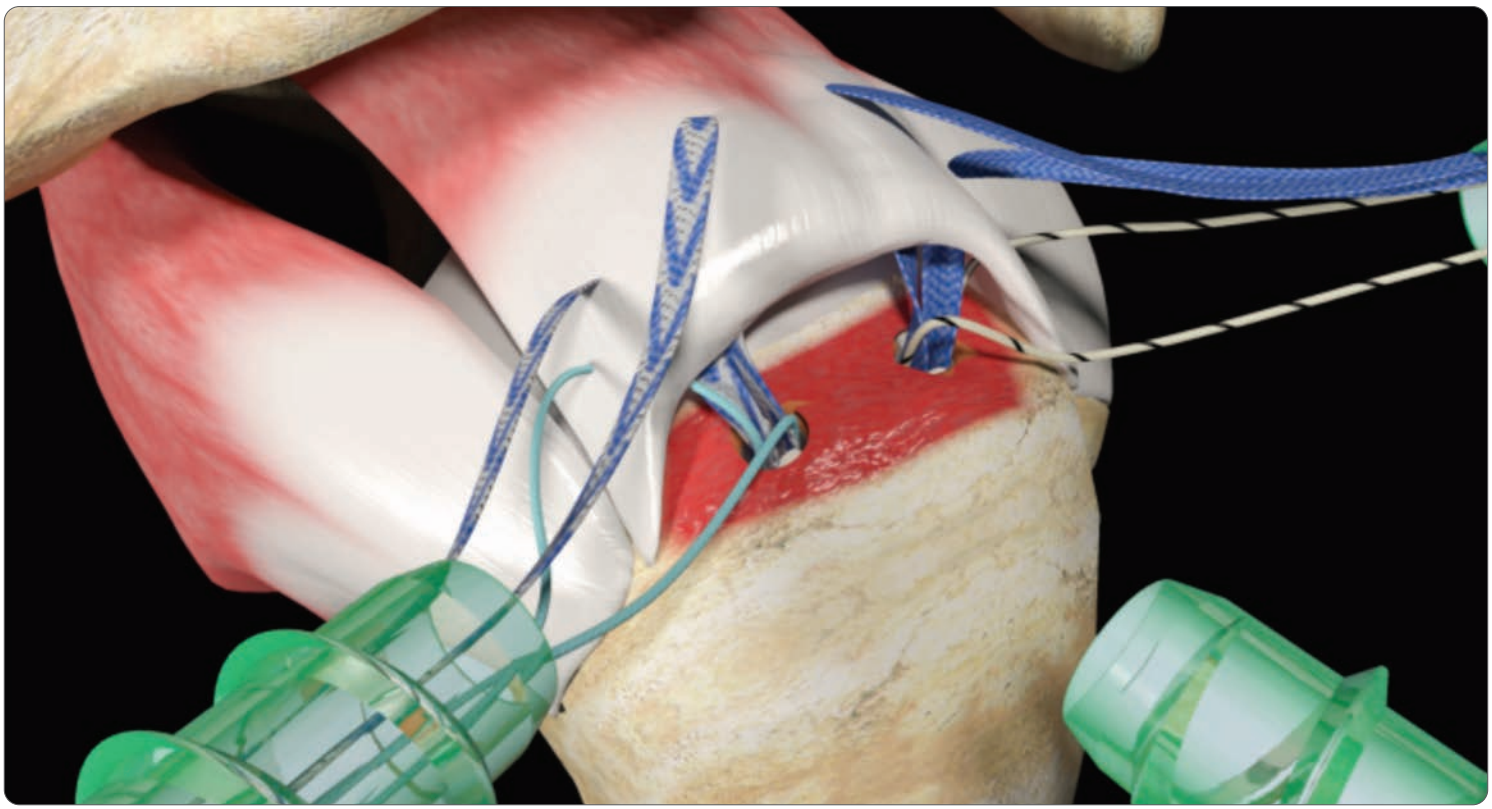


Figure 15

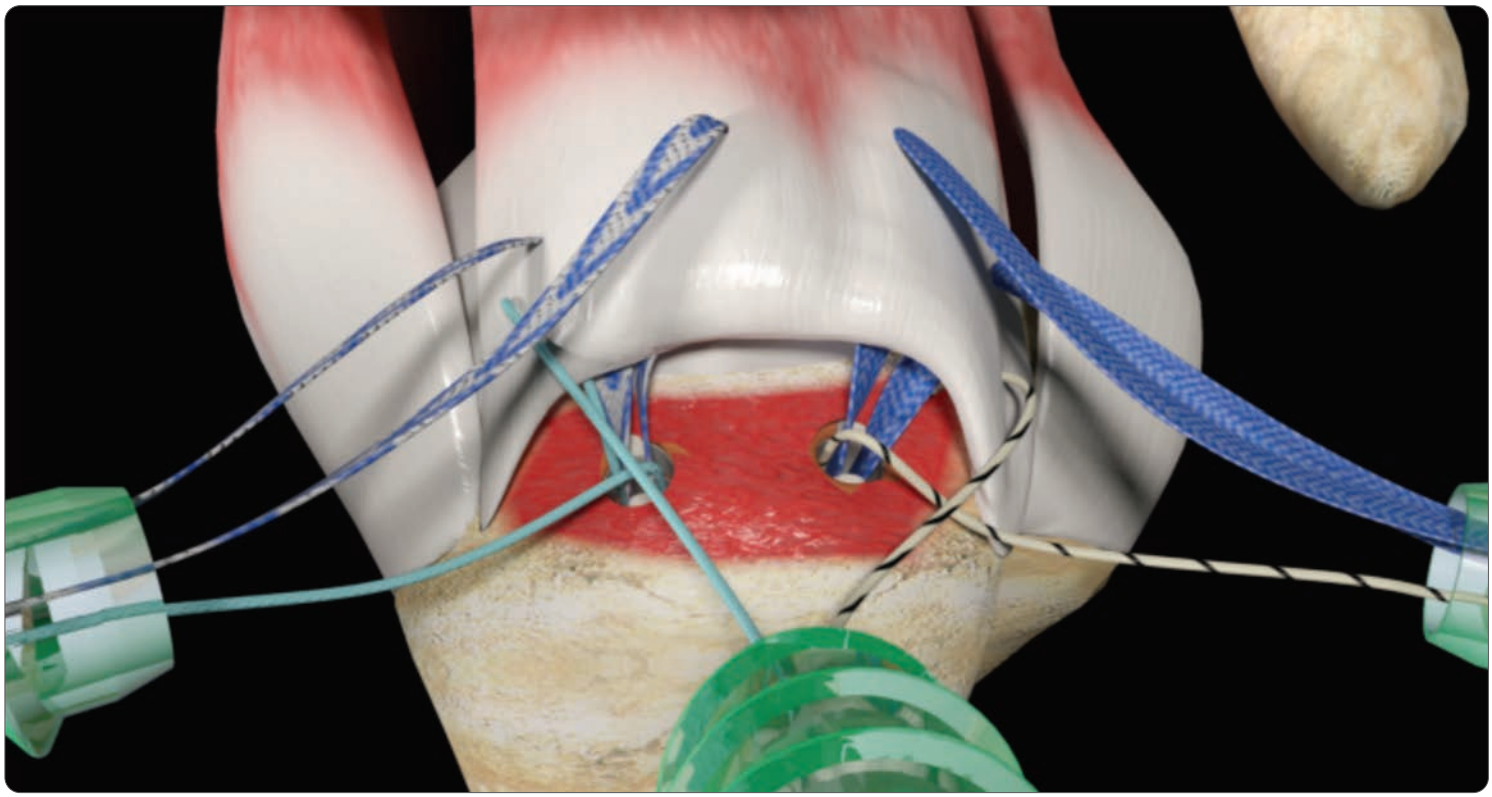


Figure 16

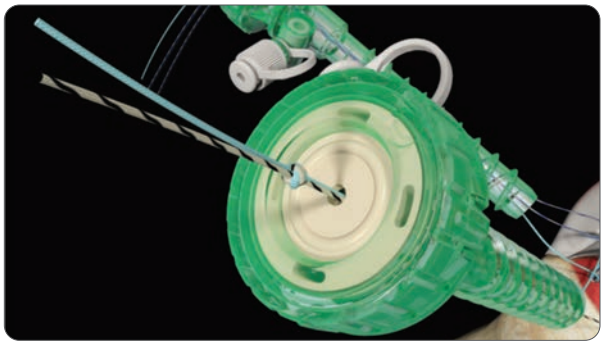


Figure 17

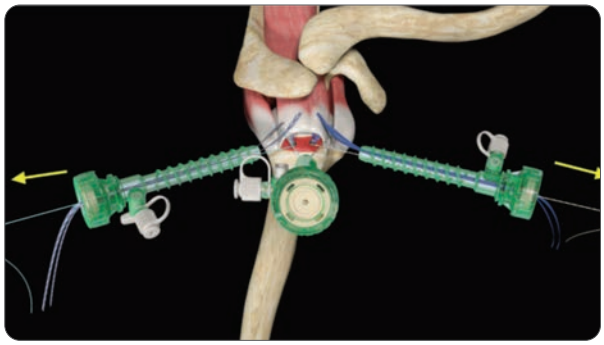


Figure 18

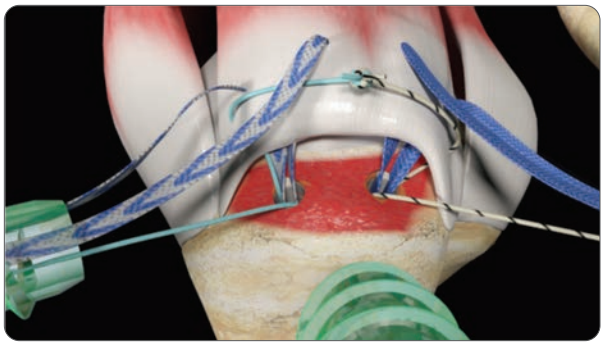


Figure 19

Medial suture bridge

15. Using the suture-loop grasper down the lateral portal, retrieve both passed limbs of ULTRABRAID® Suture – one from the anterior portal and one from the posterior portal. (**Figure 16**)
16. Outside the shoulder joint, securely tie the ends of the ULTRABRAID Suture limbs together and trim any excess suture limb tails. (**Figure 17**)
17. Pull on the ULTRABRAID Suture limbs exiting the anterior and posterior portals to slide the knotted suture down to form a medial bridge on the rotator cuff tendon. (**Figures 18, 19**)

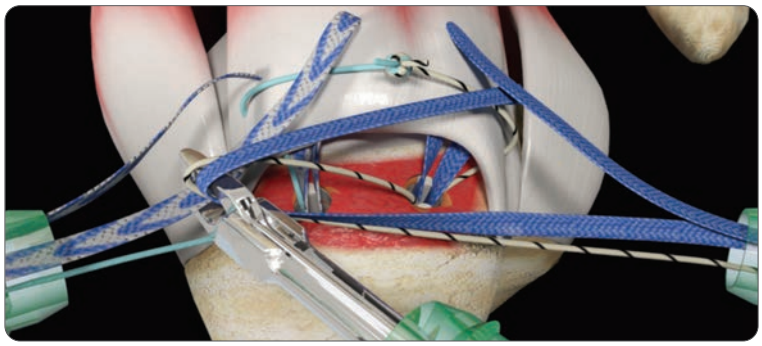
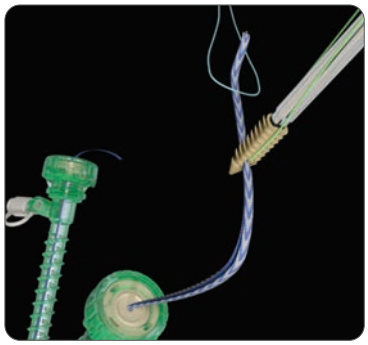


Figure 20



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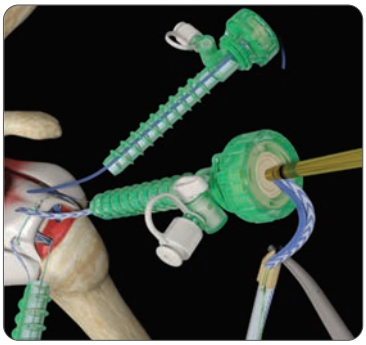
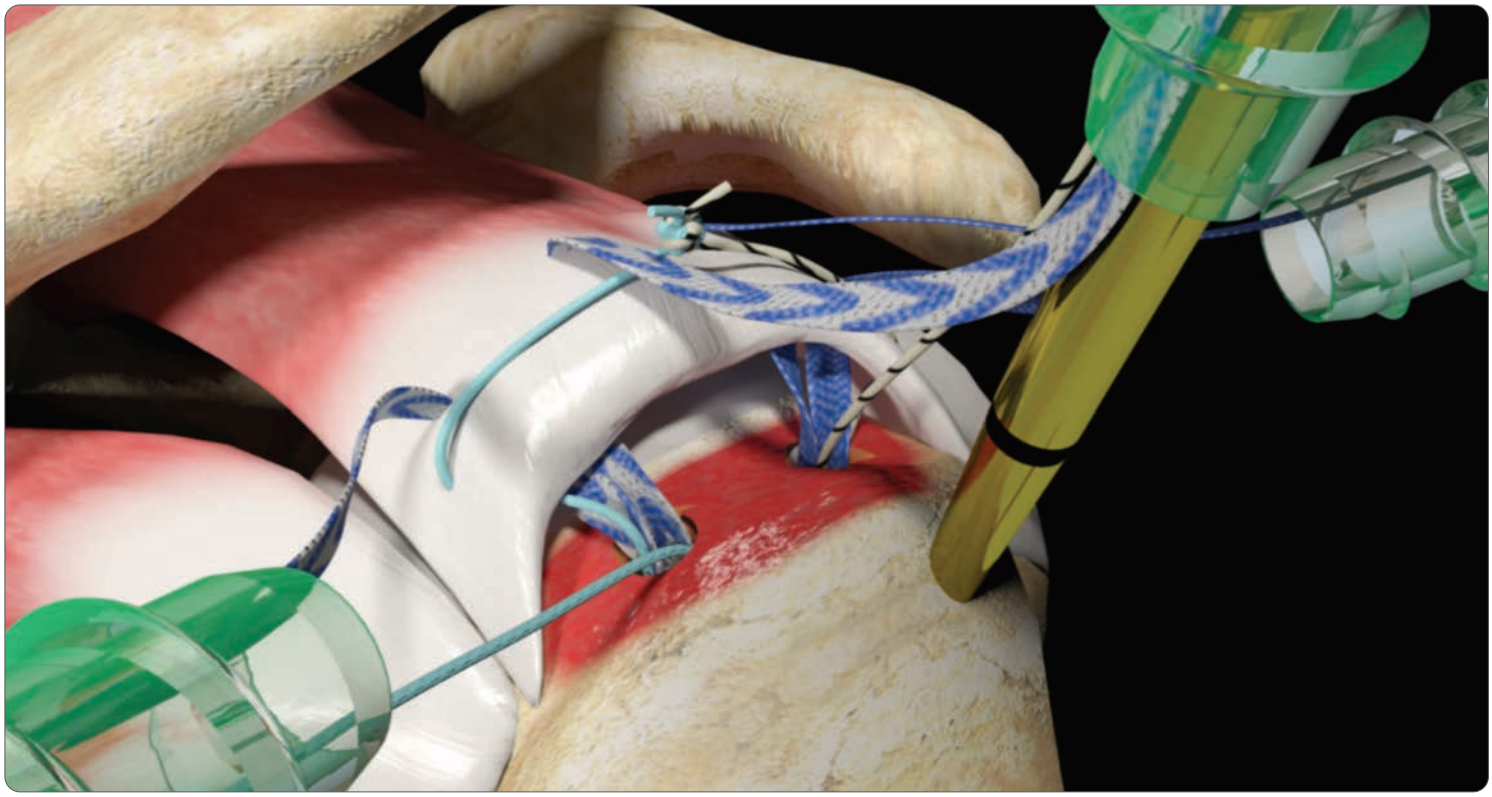


Figure 22

Suture loading and pilot hole preparation (Lateral row)

18. Using the suture-loop grasper through the lateral portal, retrieve from the anterior portal the most anteriorly passed limb of ULTRATAPE◊ Suture and the unpassed limb of ULTRABRAID◊ Suture, AND from the posterior portal, the most anteriorly passed limb of ULTRATAPE Suture. (**Figure 20**)
19. Outside the shoulder, load the retrieved limbs of suture into the FOOTPRINT◊ ULTRA PK Knotless Suture Anchor eyelet using the attached threader loop. (**Figure 21**)
20. Clamp a hemostat over the ULTRATAPE Suture to hold in place while the pilot hole is created. (**Figure 22**)
21. Introduce the 3.8mm gold tapered awl through the lateral portal and create a pilot hole on the anterior lateral aspect of the greater tuberosity. (**Figure 23**)
    a. Tap to ensure the black laser line on the awl is flush with the bone.
    b. Remove the awl.



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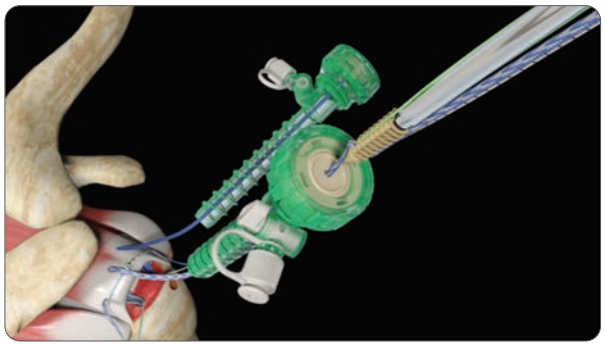

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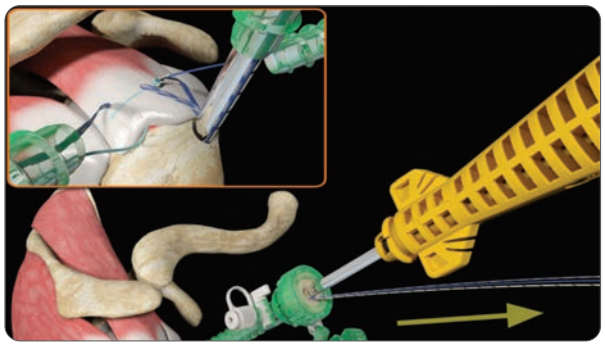

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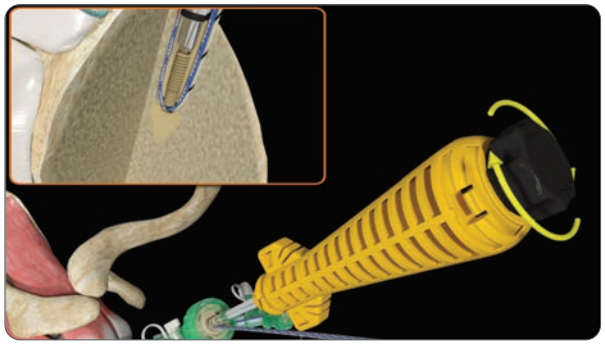

Figure 27

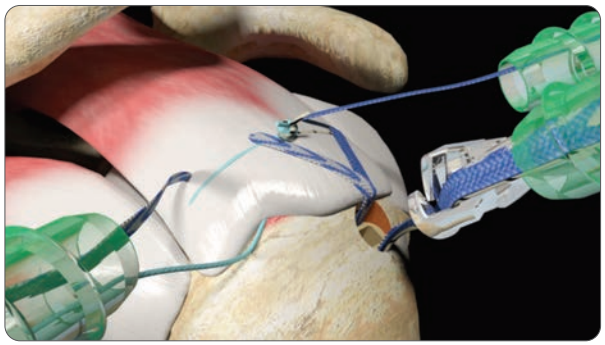

Figure 29

Anchor insertion (Lateral row)

22. Remove the haemostat, take up a small amount of slack from the ULTRATAPE◊ and the ULTRABRAID◊ sutures and introduce the FOOTPRINT◊ ULTRA PK Knotless Suture Anchor through the lateral portal, taking care not to twist the sutures. (**Figure 24**)

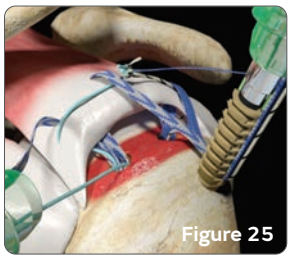

Figure 25

    a. Position the anchor over the prepared pilot hole – align the eyelet so that it faces the tendon where the suture limbs enter the anchor. (**Figure 25**)
    b. Using a mallet, tap the FOOTPRINT ULTRA PK Knotless Suture Anchor into the pilot hole, ensuring that the black laser line is flush with the bone.
    c. Release the green stay-suture from the inserter cleats, slide out of the FOOTPRINT ULTRA PK Knotless Suture Anchor and discard.
    d. Maintain light downward pressure on the anchor inserter while individually tensioning the limbs of suture through the FOOTPRINT ULTRA PK Knotless Suture Anchor, until desired repair tension is achieved. (**Figure 26**)
    e. Keeping light downward pressure on the inserter, rotate the inserter knob clockwise to deploy the inner locking screw. Rotate until a loud click can be heard. (**Figure 27**)
    f. Rotate the inserter knob one quarter turn counterclockwise – this allows for easier separation of the anchor from the inserter. (**Figure 28**)

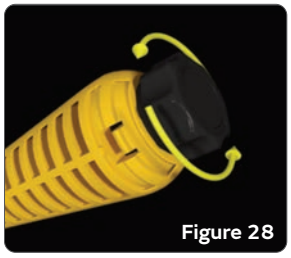

Figure 28

    g. Remove the inserter.

Anchor insertion (Lateral row)

23. Cut the excess limbs of ULTRATAPE Suture with the Smith+Nephew Flush Suture Cutter. (**Figure 29**)
24. Repeat the previous sequence of steps, inserting a final FOOTPRINT ULTRA PK Knotless Suture Anchor in the posterior lateral aspect of the greater tuberosity to complete the repair. (**Figure 30**)

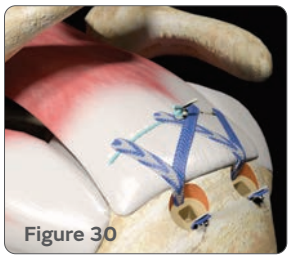

Figure 30

Ordering information

Reference #	Description
ULTRATAPE◊ Suture	
72203896	ULTRATAPE Suture (Blue, 6 per box)
72203897	ULTRATAPE Suture (Cobraid Blue, 6 per box)
HEALICOIL◊ PK Suture Anchors with ULTRATAPE Suture	
72203981	HEALICOIL PK 4.5mm Suture Anchor with one ULTRATAPE Suture (Blue)
72203982	HEALICOIL PK 4.5mm Suture Anchor with one ULTRATAPE Suture (Cobraid Blue)
72203983	HEALICOIL PK 5.5mm Suture Anchor with one ULTRATAPE Suture (Blue) and one ULTRABRAID◊ Suture (#2)
72203984	HEALICOIL PK 5.5mm Suture Anchor with one ULTRATAPE Suture (Cobraid Blue) and one ULTRABRAID Suture (#2)
72202621	3.8mm Tapered Awl, disposable
72201915	3.8mm Tapered Awl, reusable
HEALICOIL REGENESORB◊ Suture Anchors with ULTRATAPE◊ Suture	
72203705	HEALICOIL REGENESORB 4.75mm Suture Anchor with one ULTRATAPE Suture (Blue) and one ULTRABRAID Suture (#2)
72203697	HEALICOIL REGENESORB 4.75mm Suture Anchor with one ULTRATAPE Suture (Cobraid Blue) and one ULTRABRAID Suture (#2)
72203708	HEALICOIL REGENESORB 5.5mm Suture Anchor with one ULTRATAPE Suture (Blue) and one ULTRABRAID Suture (#2)
72203709	HEALICOIL REGENESORB 4.75mm Threaded Dilator, reusable
72203710	HEALICOIL REGENESORB 5.5mm Threaded Dilator, reusable
72203951	HEALICOIL REGENESORB 4.75mm Threaded Dilator, disposable
72203952	HEALICOIL REGENESORB 5.5mm Threaded Dilator, disposable
72203801	HEALICOIL REGENESORB 5.5mm Suture Anchor with one ULTRATAPE (Cobraid Blue) and one ULTRABRAID Suture (#2)
FOOTPRINT◊ Ultra PK Suture Anchors	
72202901	FOOTPRINT Ultra PK 4.5mm
72202902	FOOTPRINT Ultra PK 5.5mm
ULTRATAPE Suture Passing	
72203791	TRUEPASS Suture Passer, Self-Capture
72203792	TRUEPASS Suture Passer, Standard
72203793	TRUEPASS Disposable Needles (box of 5)
72204385	ARTHRO-PIERCE◊ ULTRATAPE, 35° up

To order the instruments used in this technique, call **+1 800 343 5717** in the U.S. or contact an authorized Smith+Nephew representative. Prior to performing this technique, consult the Instructions for Use documentation provided with individual components – including indications, contraindications, warnings, cautions and instructions.

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