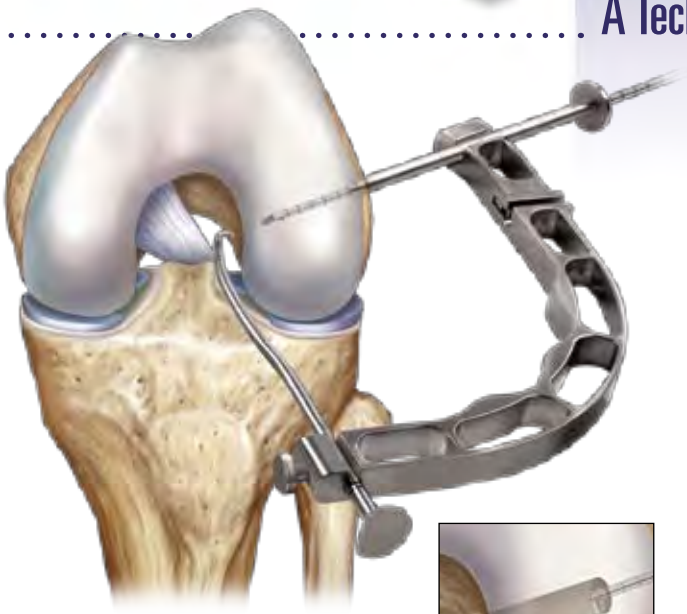
Volume 10, Number 4

SCOPE THIS OUT

A Technical Pearls Newsletter for Arthroscopists



Socket "retrodrilled" w/FlipCutter

Constant Femoral Guide

Anatomic femoral socket placement is paramount to good clinical outcomes in ACL reconstruction. The restrictions of the transtibial approach have been shown to force socket placement outside the native footprint and thus cause unacceptable rotational instability.

The two-incision technique has been shown to offer increased flexibility in anatomic femoral socket placement, but can lead to higher morbidity and unacceptable cosmesis.

FlipCutter technology allows surgeons to place the femoral socket without anatomic restrictions or femoral soft tissue dissection. Using the Constant Femoral Guide surgeons can place the FlipCutter in any orientation, from an outside/in approach. Once in the joint, the FlipCutter can then be used as a retrograde reamer to create the femoral socket from the inside/out.

Low Profile Reamers

Low Profile Reamers facilitate femoral socket preparation through the medial portal and also allow greater flexibility in femoral socket placement for transtibial procedures.The reamer's extra thin shaft and "two-flute" design provides a flat profile that easily passes through the portal and avoids damaging the femoral condyle and PCL.

Standard 9 mm Reamer
vs 9 mm Low Profile Reamer

The reduced length of the flutes allows the sharp drill to spin without contacting PCL fibers. Low Profile Reamers are available in 5 mm - 11 mm diameters and come packaged sterile for convenience and guaranteed sharpness. Use Low Profile Reamers with the Arthrex Transportal ACL Guides for anatomic guide pin placement and backwall measurement.

BioComposite Shoulder Anchors

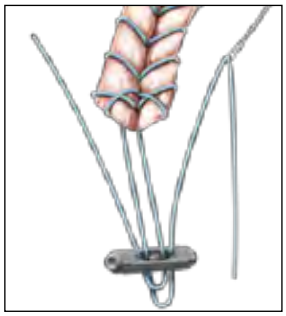
The 5.5 mm Corkscrew FT, 3.5 mm PushLock, and 3 mm SutureTak are now available in a BioComposite material containing both ß-TCP and PLLA. The addition of 15% Beta tricalcium phosphate maintains comparable insertion strength and 12 week degradation properties to our PLLA anchors. Studies suggest that early bone formation can be connected to the favorable osteoconductive and bioresorbable properties within ß-TCP.

In This Issue

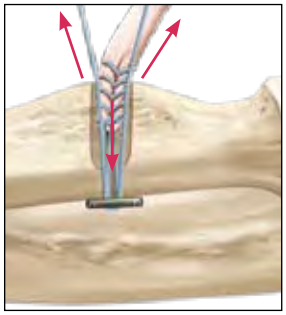
New for 2009! Check out the interactive version of this newsletter featuring up-to-date content, embedded video and additional features online at www.arthrex.com

Distal Biceps Repair Implant System

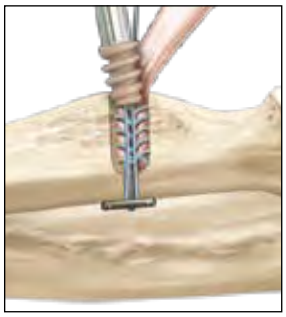
The Distal Biceps Repair Implant System and the Tension Slide Technique give the surgeon a simple, reproducible, and biomechanically superior method for repairing the distal biceps. This technique, using the BicepsButton, reliably seats the tendon against the distal cortex of the bone socket, therefore maximizing the surface area for tendon-to-bone healing. The PEEK Tenodesis Screw adds to the construct strength and helps place the tendon at the more anatomic crescent-shaped insertion. In addition, the included FiberLoop reduces time spent whipstitching the tendon and the Button Inserter allows for a simplified, less traumatic single incision technique.



Whipstitch tendon using FiberLoop. Feed the two suture tails through the BicepsButton, using FiberLoop needle.



Push the button through the radius with the inserter and draw the tendon to the socket base by tensioning free suture limbs.

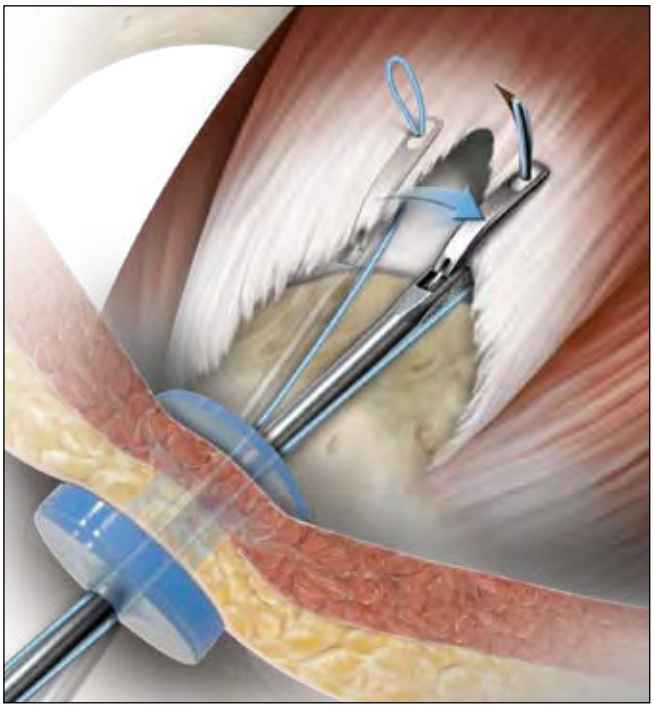


To complete the repair, add a Tenodesis Screw to push the tendon to more ulnar and anatomic position. Tie the free suture ends over the Tenodesis Screw.

Distal Biceps Repair Implant System

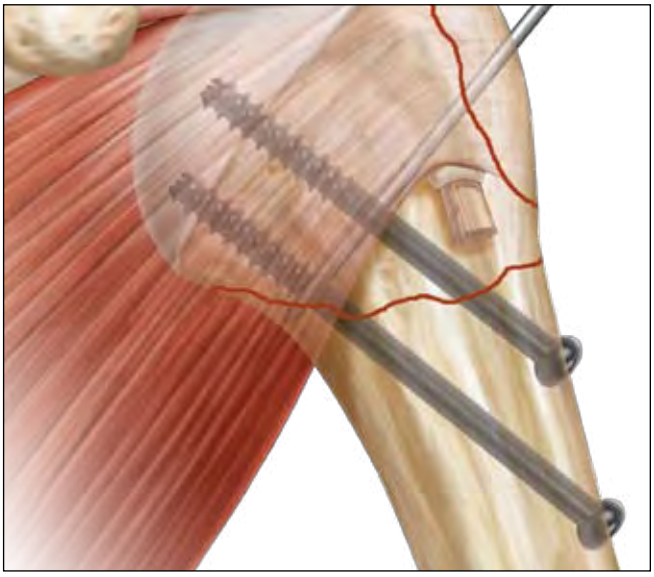
MultiFire Scorpion

The MultiFire Scorpion allows the surgeon to load two sutures outside and independently pass two sutures inside. The low profile designs of the Humpback and straight styles fit down either a 5 mm or 7 mm cannula. The disposable MultiFire Needle withstands multiple suture passes during a single case.



Percutaneous Humeral Fracture Repair

A minimally invasive option to repair two or three part proximal humeral fractures, this percutaneous system includes reduction instruments and a fully guided system for the delivery of 2.5 mm Percutaneous Pins and 4.5 mm Cannulated Screws.



PRODUCT INFO

Imaging & Resection

WideBiter XL Series

The WideBiter XL Series of manual instruments, in eight different models, features lengthened cutting jaws making these the perfect tools for resecting thick meniscus tissue. The increased bite size was accomplished without increasing the shaft or tip sizes, maintaining access of these versatile devices into the same tight joint spaces as the standard WideBiter series.

Make your set of meniscal resection instruments complete by adding the Meniscal WideBiters and a Reverse Punch to your tray. The Meniscal WideBiters feature a wide, curved cut that quickly resects torn tissue to an anatomically stable contour. The Reverse Punch, that cuts on both the left and right side, easily resects tissue in the anterior third of the meniscus.

These lifetime guaranteed instruments, combined with the new Meniscal Cinch, create the perfect system to treat all meniscal tears with confidence.

CoolCut Series Blades and Burrs

Announcing the release of the CoolCut Series of Shaver Blades and Burrs. These unique devices feature innovative designs including the FlushCut and ClearCut Burrs, and Excalibur, Dissector and Bone Cutter Shaver Blades. The CoolCut Shavers' and Burrs' unparalleled cutting efficiency help your procedures finish quickly, easily resecting even the toughest tissues and hardest bone with greater control.

These new single use products have an increased working length over previous designs allowing access to difficult to reach intraarticular recesses, even if using a bridge cannula system.

Calibrated shaft markings facilitate intraoperative measurement of anatomical structures.

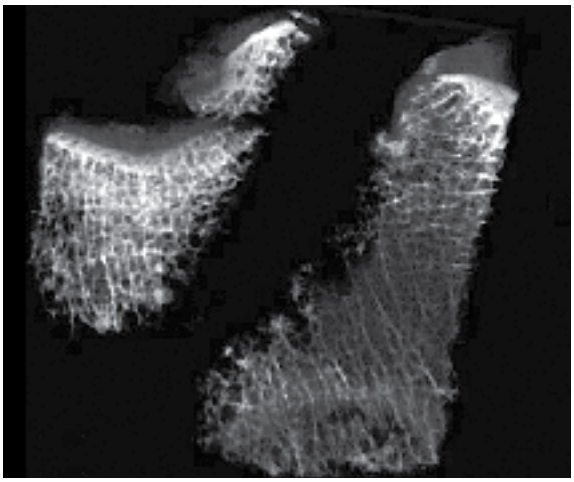
Research Corner

RetroDrill Produces Superior Tunnels

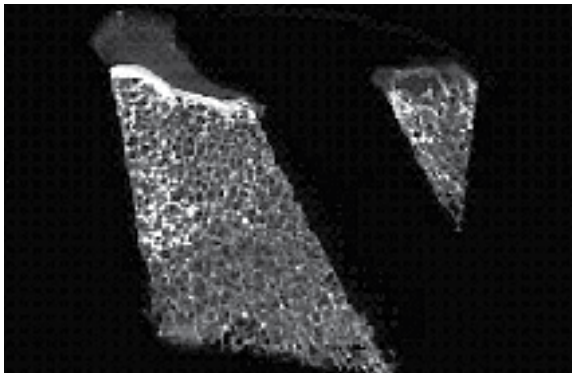
Retrograde drilling has been shown to produce superior tibial tunnels in a recent study by McAdams et al[1]. In this study, four tibial tunnels were drilled in human cadaver using standard cannulated reamers and compared to four tunnels made with the RetroDrill. CT scans were then taken of the tibias and read by "blinded" radiologists to assess tunnel quality in terms of microfracturing.

Significant microfracturing and irregularity of the tunnels was seen with all specimens prepared with standard drilling. None of the "retrodrilled" specimens showed any sign of fracturing.

The author also discusses possible clinical implications of "retrodrilled" tunnels such as decreased synovial fluid leakage into the tibial tunnel, decreased windshield wiper effect, improved healing and decreased tunnel widening. These benefits are supported by previous studies linking poor or delayed graft healing to synovial fluid and graft motion[2,3].



Three-dimensional and sagittal computed tomography of tibial tunnel specimen from antegrade group demonstrates fracture of subchondral bone



Three-dimensional and sagittal computed tomography of tibial tunnel after retrograde drilling shows no subchondral fracture or microtrauma

1) McAdams TR, et al (2008), *Tibial Aperture Bone Disruption after Retrograde versus Antegrade Tibial Tunnel Drilling: a Cadaveric Study.* Knee Surg Sports Traumatol Arthrosc.
2) Berg EE, Pollard ME, Kang Q (2001), *Interarticular Bone Tunnel Healing.* Arthroscopy 17:189-195.
3) Rodeo SA, Kawamura S, Kim H, et al (2006), *Tendon Healing in a Bone Tunnel Differs at the Tunnel Entrance versus the Tunnel Exit: An Effect of Graft - Tunnel Motion?* American Journal Sports Medicine 34:1790-1800.

3.0, 4.5, 5.5 and 6.7 mm Cannulated Screws Designed for Foot and Ankle Indications

For many years foot and ankle surgeons have "made do" with implants and instrumentation designed for other purposes. While many foot and ankle surgeons have developed MacGyver-like abilities to handle these situations, these nonspecific tools do not always result in easy procedures or ideal outcomes.

Arthrex is proud to announce the launch of its low profile, cannulated, titanium screw line - designed by foot and ankle surgeons, for foot and ankle surgeons.

The cornerstone of this line is the large 6.7 mm screw that will see heavy use in the hindfoot and ankle. Most screws in this size range are developed for hip fractures, and require an oversized guide pin.

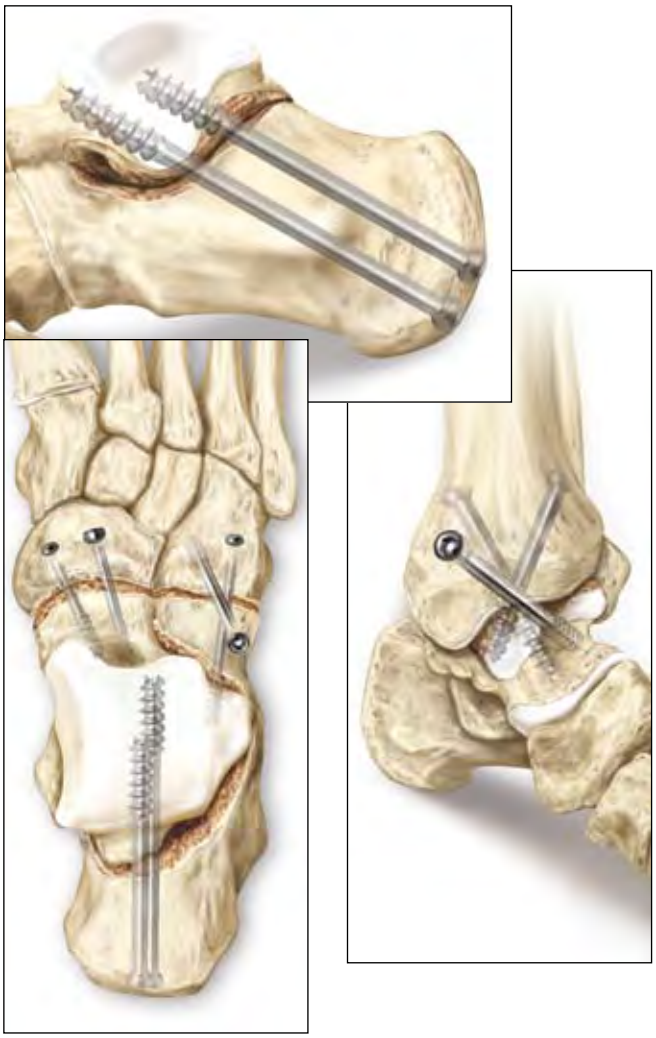
The large diameter pin enables accurate placement into a femoral head that is a significant distance from where the pin enters the femur. This application has led hardware manufacturers to enlarge the inner part of the screw, decreasing thread purchase. Hip screws also have the advantage of deep placement where hardware prominence is a non-issue, so traditional screw heads have been large.

Arthrex worked with a team of foot and ankle surgeons to develop a design to maximize their screws effectiveness in the lower extremity. The design lowers head profile by 1 mm, uses an 18 mm thread length and increases pull-out by 30% in comparison to a standard AO screw. This makes the screw ideal for the high demand, low coverage applications in the foot. Other screws in this family will also offer deeper threads and lower profile heads.

The 4.5 mm and 6.7 mm screws are available in a comprehensive set that will include a subtalar/ankle targeting guide that will improve accuracy and speed in the placement of these screws. The limited set of MCO appropriate lengths (40 - 60 mm) of 6.7 mm LPS Screws will also be available in a tandem tray with the Tenodesis system as a complete solution for flatfoot reconstructions. The newly released 5.5 mm screws are partially threaded and specifically designed for Jones fractures. The 3 mm screws will come with both the Forefoot Fusion Module (along with the new MTP plate and reamers) and in a forefoot screw tray with 2.3 mm cannulated LPS Screws.

5.5 mm Jones Fracture Screw

3 mm Partially Threaded Screw



TightRope Syndesmosis Buttress Plate Kit

The TightRope Syndesmosis Buttress Plate Kit (SBT Kit) features a four-hole, contoured, titanium plate, to be used as a "buttress" for ankle syndesmotic repairs with or without ankle fracture. The plate has two inner holes that custom fit the Round Button of the TightRope and two outer holes that accept two 3.5 mm x 14 mm nonlocking screws. The kit comes with a TightRope to complete the syndesmotic fixation.

Pointers & Pearls

ACP Double Syringe System

Autologous **C**onditioned **P**lasma (ACP) has created a growing interest for use in a number of orthopaedic therapies. The healing effects of plasma are supported by growth factors released by platelets. These growth factors induce a healing process wherever they are applied.

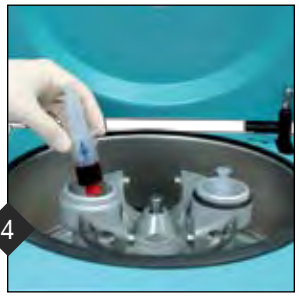
Features and Benefits:

- The ACP System is a simple, cost-effective method of concentrating growth factors for therapeutic use.
- Producing ACP with the ACP System can be performed within minutes. Typical platelet rich plasma (PRP) systems take up to 45 minutes to process the blood for application, thereby delaying treatment and increasing the cost of the procedure.
- The ACP System can be used in a clinic or under sterile conditions in an OR setting. The unique double syringe design allows for convenient and safe handling, as the whole preparation process takes place in a sterile, closed system.
- The cost of the ACP System is significantly less than conventional PRP devices.

Prior to withdrawing ACD-A, prime the innermost syringe by pulling it back and pushing it forward completely before starting the process. Withdraw approximately 1 mL ACD-A into the syringe. *Caution: Draw back only the plunger of the outer syringe.*

Withdraw approximately 9 mL of venous blood and seal the syringe with the red cap.

Gently rotate the syringe in order to mix the blood and the ACD-A.



Place the syringe into one bucket and an appropriate counter balance in the opposite bucket. Two syringes may be used to increase dosage.

Run the centrifuge at 1500 rpm for 5 minutes. Remove the syringe, taking care to keep it in an upright position to avoid mixing the plasma and red blood cells.

In order to transfer 2 - 4 mL of supernatant (ACP) from the larger outer syringe into the small inner syringe, slowly push down on the outer syringe while slowly pulling up the plunger of the small inner syringe.

Unscrew the small inner syringe and place a needle onto it.

The ACP is ready for use at the point of care.

IN THE Loop...

Described by Stephen Nicholas, M.D.
Director, Nicholas Institute of Sports Medicine and Athletic Trauma (NISMAT)
Lenox Hill Hospital, New York, N.Y.

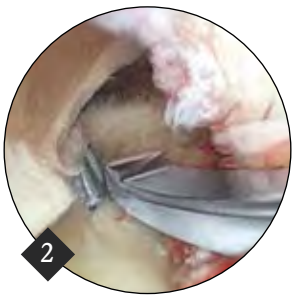
Meniscal Root Avulsion Repair Using the FlipCutter

Avulsion of the meniscal root can lead to meniscal extrusion and loss of normal hoop stress distribution by the meniscus. This has been shown to result in excessive tibiofemoral contact pressures[1-3] and has been associated with development of arthritis in the affected compartment of the knee[4-6]. Repair of the meniscal root avulsion has been shown to restore the normal contact stresses[1-3], and may prevent degeneration of articular cartilage. Several methods for reattachment of the avulsed meniscal root have been described, without a consensus as to the preferred technique.

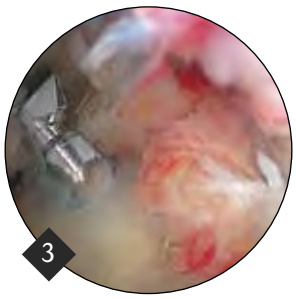
The use of the FlipCutter allows anatomic reattachment of the avulsed meniscal root to be performed with an all-arthroscopic technique, and can be used for both medial or lateral injuries. The FlipCutter allows creation of a small intraosseous socket at the meniscal tibial attachment, thus minimizing tibial reaming, and may be particularly useful for repairing root avulsions in knees with multi-ligamentous injuries. The technique is minimally-invasive, bone-sparing and should allow restoration of normal meniscal architecture and function.

Surgical Technique

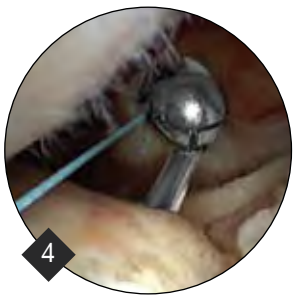
Avulsed posterior root of the meniscus is probed and found to be completely detached from its insertion site. ***(Medial meniscus shown in this and other images)***



A FlipCutter tip-aiming guide is inserted through one of the anterior portals and placed onto the meniscal root insertion site. The FlipCutter is then advanced through the guide into the knee joint.

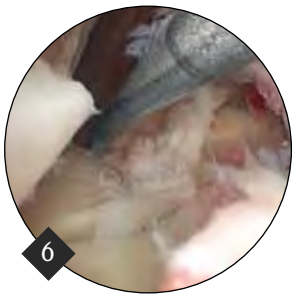


The aiming guide is removed and the tip of the FlipCutter is flipped (with an arthroscopic probe) and locked in preparation for retrograde reaming.



A Micro SutureLasso penetrates the grasper stabilized meniscal root through the 3.5 mm FlipCutter's transosseous hole. Shuttle the flexible wire loop out through the posteromedial or anteromedial portal with the grasper. This allows for suture shuttling through the avulsed meniscal root and creation of a mattress-type repair. Suture ends are withdrawn at the FlipCutter entry point on the proximal tibia.

Both suture loops of the mattress-type repair are tensioned, which pulls the avulsed meniscal root over the socket created at its the insertion site.



After the sutures are tensioned and tied over a metal or bioabsorbable button on the proximal tibia, the meniscal root insertion site is restored and firmly secured.

References:

1. Baratz ME, Fu FH, Mengato R. *Meniscal Tears: The Effect of Meniscectomy and of Repair on Intraarticular Contact Areas and Stress in the Human Knee.* A Preliminary Report. Am J Sports Med 1986;14:270-275.
2. Allaire R, Muriuki M, Gilbertson L, Harner CD. *Biomechanical Consequences of a Tear of the Posterior Root of the Medial Meniscus. Similar to Total Meniscectomy.* J Bone Joint Surg 2008;90:1922-1931.
3. Marzo JM, Gurske-Deperio J. *Effects of Medial Meniscus Posterior Horn Avulsion and Repair on Tibiofemoral Contact Area and Peak Contact Pressure with Clinical Implications.* Am J Sports Med; 2008, Sept 24 (available at http://ajs.sagepub.com).
4. Pagnani MJ, Cooper DE, Warren RF. *Extrusion of the Medial Meniscus.* Arthroscopy 1991;7:297-300.
5. Berthiaume MJ, Raynauld JP, Martel-Pelletier J, et al. *Meniscal Tear and Extrusion are Strongly Associated with Progression of Symptomatic Knee Osteoarthritis as Assessed by Quantitative Magnetic Resonance Imaging.* Ann Rheum Dis 2005;64:556-563.
6. Jones AO, Houang MT, Low RS, Wood DG. *Medial Meniscus Posterior Root Attachment Injury and Degeneration: MRI Findings.* Australas Radiol 2006;50:306-313.

What's in My Bag?

Featuring: Stephen J. Snyder, M.D.

Orthopaedic Surgeon Specializing in Shoulder Arthroscopy
Southern California Orthopedic Institute - Van Nuys, CA

Q. What's "in your bag" for arthroscopic postoperative wound treatment?

A. I have been using the Arthrex ProWick postoperative shoulder dressing to "finish" all of my shoulder arthroscopy cases since its release and I have been very pleased with the results.

Q. What motivated you to support the development of the ProWick system?

A. Since beginning shoulder arthroscopy in 1983, I have been unhappy with the traditional "tape and pad" options for dressing the shoulder after arthroscopy. Often my patients would develop blisters or a rash from the adhesive tape and frequently it failed to seal, allowing bloody fluids to soil the patient's clothing and sling. In addition, the ABD pads were very thick acting as an insulator and diminishing the benefits of ice therapy.

Q. What advantages do you see in the ProWick system over the traditional wound dressing methods?

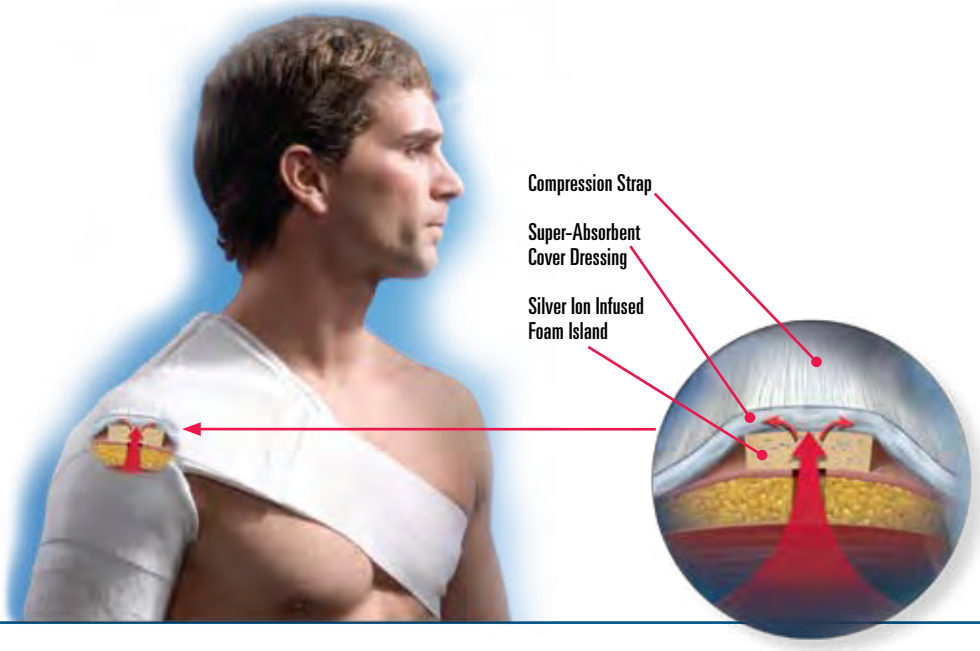
A. The ProWick dressing is extremely easy to apply in the OR and provides a reliable "tapeless" dressing for the shoulder that is light-weight and leak resistant. It also provides compression and facilitates the benefits of ice therapy using either the supplied ice bag or a mechanical ice water recirculation pump. The waterproof bandaids included with the system are a handy way for the patient to easily keep the surgical sites dry during the first post-op week while showering.

Q. How has the ProWick Shoulder Postoperative Dressing and Cold Therapy System affected your practice?

A. The ProWick system has greatly improved my patients' comfort and happiness following shoulder surgery. Dressing removal on the first post-op day is simple and ice therapy is much more effective. I have not had even one call for fluid leakage following the first night after surgery and have not had to exchange a sling or explain the leakage problem.

Q. What has been the feedback from patients regarding the ProWick system?

A. The feedback from my patients, as well as the recovery room nurses, has been very positive. They appreciate the ease of removal and lack of tape problems on their skin, as well as the lightweight comfort it provides. My practice partners who also do shoulder surgery agree and all now use the ProWick for dressing their post-op shoulder patients.



ProWick shown with cold pack in place

26 Orthopaedic Procedures Added to Medicare ASC List in 2008 - *Source: Centers for Medicare Medicaid*

1. *20150* ($1,779.62) Excision of epiphyseal bar, with or without autogenous soft tissue graft obtained through same fascial incision.
2. *20555* ($1,208.50) Placement of needles or catheters into muscle and/or soft tissue for subsequent interstitial radioelement application *(at the time of or subsequent to the procedure)*. New Code 2008
3. *24149* ($1,208.50) Radical resection of capsule, soft tissue, and heterotopic bone, elbow, with contracture release *(separate procedure)*.
4. *24152* ($1,179.62) Radical resection for tumor, radial head or neck.
5. *24153* ($3,288.25) Radical resection for tumor, radial head or neck; with autograft *(includes obtaining graft)*.
6. *24300* ($611.32) Manipulation, elbow, under anesthesia.
7. *24343* ($1,208.50) Repair lateral collateral ligament, elbow, with local tissue.
8. *24344* ($3,288.25) Reconstruction lateral collateral ligament, elbow, with tendon graft *(includes harvesting of graft)*.
9. *24346* ($1,779.62) Reconstruction medial collateral ligament, elbow, with tendon graft *(includes harvesting of graft)*.
10. *24357* ($1,208.50) Tenotomy, elbow, lateral or medial *(e.g., epicondylitis, tennis elbow, golfer's elbow)*; percutaneous. New Code 2008
11. *24358* ($1,208.50) Tenotomy, elbow, lateral or medial *(e.g., epicondylitis, tennis elbow, golfer's elbow)*; debridement, soft tissue and/or bone, open. New Code 2008
12. *24359* ($1,208.50) Tenotomy, elbow, lateral or medial (e.g., epicondylitis, tennis elbow, golfer's elbow); debridement, soft tissue and/or bone, open with tendon repair or reattachment. New Code 2008
13. *25109* ($880.55) Excision of tendon, forearm and/or wrist, flexor or extensor, each.
14. *25431* ($1,089.28) Repair of nonunion of carpal bone *(excluding carpal scaphoid (navicular)) (includes obtaining graft and necessary fixation)*, each bone.
15. *25651* ($1,083.02) Percutaneous skeletal fixation of ulnar styloid fracture.
16. *25652* ($1,701.96) Open treatment of ulnar styloid fracture.
17. *27416* ($1,779.62) Osteochondral autograft(s), knee, open (e.g., OATS) *(includes harvesting of autograft[s])*.
18. *27440* ($1,486.46) Arthroplasty, knee, tibial plateau.
19. *27446* ($11,371.67) Partial knee replacement/Arthroplasty of the condyle and plateau; medial OR lateral compartment.
20. *27769* ($1,701.96) Open treatment of posterior malleolus fracture, includes internal fixation, when performed. New Code 2008
21. *29828* ($1,892.32) Arthroscopic shoulder biceps tenodesis. New Code 2008
22. *29866* ($1,892.32) Arthroscopy, knee, surgical; osteochondral autograft(s) (e.g., mosaicplasty) *(includes harvesting of the autograft[s])*.
23. *29904* ($1,191.53) Ankle arthroscopy, subtalar joint, with removal of loose body or foreign body. New Code 2008
24. *29905* ($1,191.53) Ankle arthroscopy, subtalar joint, with synovectomy. New Code 2008
25. *29906* ($1,191.53) Ankle arthroscopy, subtalar joint, with debridement. New Code 2008
26. *29907* ($1,892.32) - Ankle arthroscopy, subtalar joint, with subtalar arthrodesis. New Code 2008

STO Featured Product Information

Constant Femoral Guide	AR-1865
Low Profile Reamers, 6 - 11 mm	AR-1406LP - 1411LP
BioComposite Corkscrew FT	AR-1927BCF
BioComposite PushLock	AR-1926BC
BioComposite SutureTak w/#2 FiberWire	AR-1934BCF
BioComposite SutureTak w/#2 TigerTail	AR-1934BCFT
BioComposite SutureTak w/two #2 FiberWire	AR-1934BCF-2
BioComposite SutureTak w/two #2 TigerTail	AR-1934BCFT-2
PEEK Hip PushLock, 2.9 mm x 14 mm	AR-1923PHS
Disposables Kit for 2.9 mm PEEK Hip PushLock	AR-1923DHS
Distal Biceps Repair Implant System	AR-2260
BicepsButton	AR-2261
MultiFire Scorpion, Humpback	AR-13995
MultiFire Scorpion, straight, 16 mm	AR-13996
MultiFire Scorpion Needles	AR-13995N
WideBiter XL Punch, straight tip, straight shaft	AR-11040XL
WideBiter XL Punch, straight tip, 15° up curve shaft	AR-11041XL
WideBiter XL Punch, straight tip, 30° right curve shaft	AR-11042XL
WideBiter XL Punch, straight tip, 30° left curve shaft	AR-11043XL
WideBiter XL Punch, 15° up tip, straight shaft	AR-11240XL
WideBiter XL Punch, 15° up tip, 15° up curve shaft	AR-11241XL
WideBiter XL Punch, 15° up tip, 30° right curve shaft	AR-11242XL
WideBiter XL Punch, 15° up tip, 30° left curve shaft	AR-11243XL
Reverse Punch, straight	AR-12520
Meniscal WideBiter Punch, left, straight	AR-11391
Dissector Shaver, 4 mm x 13 cm	AR-8400DS
ClearCut Round Burr, 8 flute, 4 mm x 13 cm	AR-8400CRE
Excalibur Shaver, 4 mm x 13 cm	AR-8400EX
Cannulated Lag Screws, 4.5 x 20 - 80 mm	AR-8945-20PT - 80PT
Solid Lag Screws, 5.5 x 40 - 65 mm	AR-8955-40 - 65
Cannulated Lag Screws, 6.7 mm x 40 - 120 mm	AR-8967-1840 - 18120
Syndesmosis Buttress Plate Kit	AR-8947DS
FlipCutters, 6 mm - 13 mm	AR-1204F-60 - 130
ProWick Shoulder Postoperative Dressing and Cold Therapy System	AR-1625

For more information or to order, contact your Arthrex representative or call Customer Service at 800-934-4404.

Scope This Out is an informational newsletter designed to educate orthopaedic surgeons on state-of-the-art surgical procedures and "pearls" to assist in improving surgical skills. This newsletter is published quarterly by Arthrex, Inc., exclusively for the orthopaedic surgeon community.

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