Volume 10, Number 1

SCOPE THIS OUT

A Technical Pearls Newsletter for Arthroscopists

Introducing SpeedBridge

A completely knotless SutureBridge for rotator cuff repair can be achieved with a 4.75 mm Bio-SwiveLock and FiberTape.

Please see "In The Loop"on page 5 for this technique and the "Research Corner "on page 3 for scientific data.

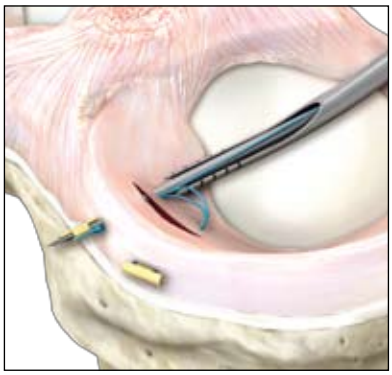
AC GraftRope

As the logical evolution of the TightRope, the AC GraftRope combines strength, simplicity, and a collagen component to address both chronic and acute acromioclavicular indications.

An autograft or allograft is easily secured to the coracoid button and a unique cortical washer allows for Tenodesis Screw fixation of the graft to the clavicle. This technique can be completed arthroscopically or open.

Meniscal Cinch

The Meniscal Cinch allows surgeons to consistently repair meniscus tears with an all-inside arthroscopic technique eliminating the need for accessory incisions required for traditional outside/in techniques that often result in additional morbidity. The low profile PEEK implants are loaded with a pretied 2-0 FiberWire that slides easily and allows proper tensioning across the tear.



The ergonomic handle and sturdy open delivery make for easy insertion into the joint and enable precise positioning. The external depth stop ensures that the implant is deployed into the capsule, protecting posterior structures in the knee. The 2-0 suture tail is extraarticular and can be tensioned to reduce suture slack in the joint for better visualization. The Knot Pusher/Suture Cutter allows the sliding knot to be countersunk under the meniscus and removal of the suture tail in one easy step.

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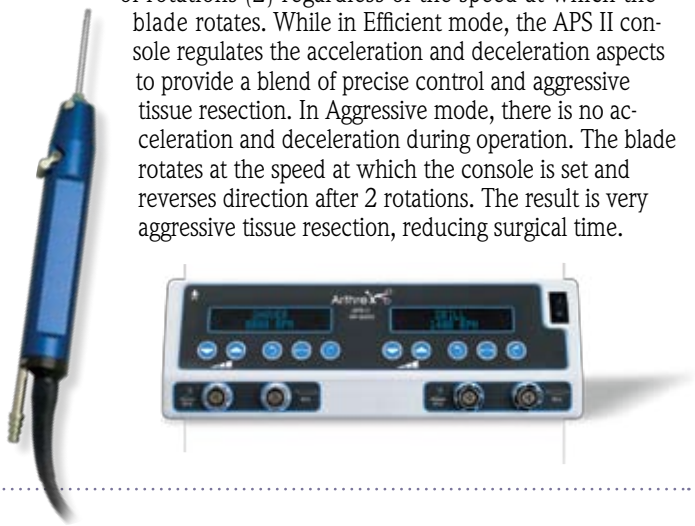
APS II Console Oscillation Modes

The flexibility of the Adapteur Power System II Shaver System has been expanded to include multiple, user-selectable oscillation profiles. The three profiles, Standard, Efficient and Aggressive, provide the surgeon with speed and precision during tissue resection regardless of the application. Each of the three modes adjusts the number of rotations and the speed at which the blade accelerates and/or decelerates before changing directions. These oscillation mode options are available on consoles with software version 5.0 or higher.

In Standard Oscillation mode, the number of rotations is based on speed. The faster the blade spins, the higher the number of rotations it makes (1.67 to 15 rpms) before changing directions. The APS II also regulates the acceleration and deceleration aspects to provide a smooth, precise performance. The Standard mode provides the ultimate experience of control during operation.

The Efficient and Aggressive modes feature a fixed number of rotations (2) regardless of the speed at which the blade rotates. While in Efficient mode, the APS II console regulates the acceleration and deceleration aspects to provide a blend of precise control and aggressive tissue resection. In Aggressive mode, there is no acceleration and deceleration during operation. The blade rotates at the speed at which the console is set and reverses direction after 2 rotations. The result is very aggressive tissue resection, reducing surgical time.



Master Instrument Set Case

Do you like the versatility of the WishBone Hand Instruments for some applications but prefer the utility of our Series I (ring handle) design for other applications? In the past, you most likely had to sacrifice one handle style for the other because your facility did not have the funds allocated to buy both. Now you don't have to. Introducing the Master Instrument Set Case . . .

The case safely and securely stores up to 10 of each handle style instrument. Additionally, the 20 instruments are held on a removable rack that can be placed closer to the surgical site for maximum accessibility. Each of the instruments is stored "tip up" for fast and easy identification to insure you get the right tool for the job. The removable rack is housed in an outer case that also contains a storage area for those "extra" parts used throughout the surgical procedure, such as arthroscope sheaths and obturators, cannulae, and even an extra hand instrument or two. *(All held securely in the aluminum Master Instrument Set Case, ideally suited for steam sterilization).*

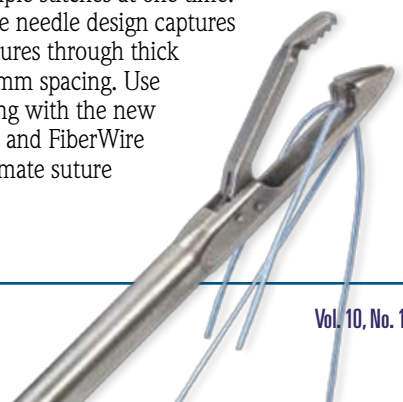
Expanula

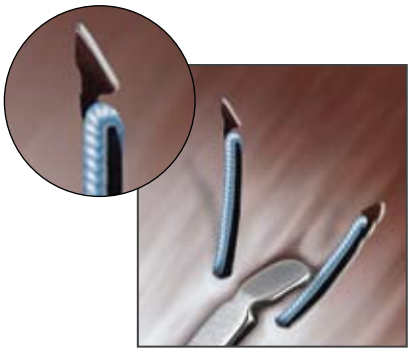
A new cannula has been developed to make arthroscopic rotator cuff repair easier. Upon insertion of the subacromial Expanula, its outer sheath is rotated to expand the distal end of the cannula beneath the deltoid. A counter-pressure ring is then pressed against the skin. This creates an extremely stable portal that allows instruments to be inserted and removed without the concern of cannula loss. The Expanula helps keep the subdeltoid bursa under control and can even be used to retract the deltoid, expanding the workspace and the view. The Expanula makes the use of antegrade suture passing devices like the Scorpion or NeedlePunch II easier.

For removal, the outer sheath of the Expanula is rotated back to its starting position allowing the cannula to be pulled out. The Expanula has an inner diameter of 8.25 mm and a working length of 7.5 cm.

Double Scorpion Suture Passer

Easily pass two pieces of FiberWire for one horizontal mattress or two simple stitches at one time. The SureFire double needle design captures and passes both sutures through thick tissue at about a 7 mm spacing. Use this instrument along with the new 8.25 mm Expanula and FiberWire Grasper for the ultimate suture passing system.





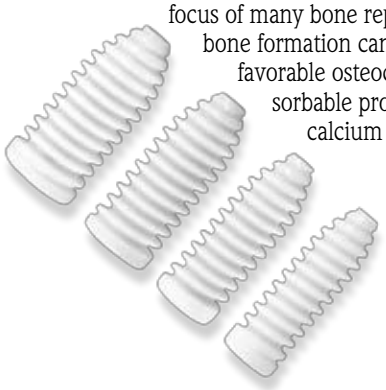
SureFire Needles

A new option for passing FiberWire for all Scorpion devices is now available. The SureFire Scorpion Needles use a side slot design to shuttle FiberWire through rotator cuff tendon. These needles also capture FiberWire within the device to prevent the suture from dislodging while positioning the Scorpion. This new needle design provides another option to help increase the already positive suture passing experience while using the Scorpion and Double Scorpion.

BioComposite Interference Screws

The BioComposite Interference Screw is comprised of 30% biphasic calcium phosphate and 70% PLDLA and is intended for use as a fixation device for bone-patellar tendon-bone (BTB) and soft tissue grafts during ACL and PCL reconstruction procedures. The blending and binding process of the two materials adds significant strength to the implant by virtually eliminating stress risers while creating a macro and micro porous matrix to aid in the bone remodeling and replacement process.

The new cannulated hexalobe drive system enhances the screw family by providing one universal drive system for all screw lengths and significantly improved torsional and insertion strength. Each screw fully seats on and is completely supported along the entire length of the driver tip. The BioComposite Screws can be inserted without pretapping. Clinical reports suggest that biphasic calcium phosphate is safe and has excellent potential for orthopaedic applications. As the focus of many bone replacement studies, early bone formation can be connected to the favorable osteoconductive and biore-sorbable properties within biphasic calcium phosphates.



7, 8, 9 and 10 mm x 23 mm BioComposite Screws

Cross-section

ACL All-Inside Disposables Kit

The ACL All-Inside Disposables Kit conveniently places frequently used disposables into one sterile kit. The package contains FiberStick, TigerStick, looped Nitinol Suture Passing Wire, RetroButton Pin, FiberLoop, TigerLoop, Nitinol guide pin, Shoehorn Cannula, sterile marking pen and ruler.

Determinator

All-inside ACL reconstruction just got simpler. The Determinator graft length guide confirms appropriate graft length for all-inside ACL procedures and eliminates the need to keep track of socket depth and intraarticular length measurements during the case.

Simply pull the blue femoral end of the Determinator into the femoral socket, the green and white tibial end into the tibial socket and leave the black and white suture through the medial portal for retrieval.

Tension the femoral and tibial Determinator sutures until the measuring beads "bottom-out" on the end of the sockets. Use the black and white suture to pull the Determintor from the joint. The distance between the ends of each bead is the total length of the sockets and the graft should be made shorter than this distance to assure proper room for tensioning. The femoral and tibial Determinator sutures can be cut and used to pass the graft.

SpeedBridge

In six matched pair of cadaver humeri, SpeedBridge was tested against SutureBridge. Constructs were cycled between 10 and 100 N for 500 cycles followed by pull to failure at 33 mm/sec. The ultimate load of the SpeedBridge and SutureBridge was 482 ± 126 N and 475 ± 84 N respectively ($p = 0.913$). The cyclic displacement of SpeedBridge and SutureBridge was 1.1 ± 0.5 mm and 1.6 ± 0.7 mm respectively ($p = 0.413$). The testing demonstrated that the SpeedBridge has equivalent fixation as compared to the SutureBridge. *(Data on file in APT 944)*

PRODUCT INFO

Small Joint

3 mm, 4.5 mm and 6.7 mm Cannulated Screws

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.

A new option is coming, so that surgeons can treat their patients better.

Arthrex is proud to announce the upcoming spring '08 launch of its Low Profile System 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 they need 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 are large and bulky for purchase on soft bone.

The Small Joint Team worked with foot and ankle surgeons to develop a design that significantly departs from the hip ideal to maximize their new 6.7 mm 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 an excellent 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 cannulated LPS Screws will become available in April and looks to make an immediate impact. The 4.5 and 6.7 mm screws will be available in a comprehensive set which includes 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 Bio-Tenodesis as a complete solution for flatfoot reconstructions. The 3 mm screws will come with both the Forefoot Fusion Module (including the new MTP plate and reamers) and in a forefoot screw tray with 2.3 mm Cannulated LPS Screws.

Ideal Indications for Cannulated LPS Screws:

6.7 mm:	4.5 mm:	3 mm:
Medializing Calcaneal Osteotomies	Midfoot Fusions	Bunion Correction
Triple/Subtalar Arthrodesis	Malleolar Fractures	MTP Arthrodesis
Ankle Arthrodesis	Talar Fractures	Tarsal Fractures

Mini TightRope FT

The Mini TightRope FT was developed to offer surgeons a new technique for the correction of the intermetatarsal angle (IMA) for hallux valgus. As is with the standard Mini TightRope placed distally, the Mini TightRope FT can support correction of the IMA if used proximally along the 1st metatarsal. The Mini TightRope FT uses a 4.5 mm (fully threaded) Bio-Corkscrew FT, #2 FiberWire and a cupped stainless steel button. The proximally placed anchor/suture button construct will support reduction of the intermetatarsal angle while allowing soft tissue remodeling and stabilization.

The TightRope FT applications include . . .

1. Hallux valgus correction by providing for the reduction of 1st metatarsal - 2nd metatarsal inter-metatarsal angle using a proximal approach.
2. Tarsometatarsal (TMT) injury, such as fixation of foot soft tissue separations due to a Lisfranc injury (Midfoot Reconstruction); and
3. Syndesmotic trauma, such as fixation of dorsal distal radioulnar ligament (DRUL) disruptions

Low Profile MTP Plate

In an effort to provide the foot and ankle surgeon a comprehensive line of metal plates and screws, Arthrex is pleased to offer the Low Profile MTP Plate. The plate is made from titanium, is anatomically designed (8° of dorsiflexion and 5° of valgus), and is low profile (1.5 mm thick). Given the anatomic design, the plate does not hyperdorsiflex or malrotate which allows for use in primary and revision cases.

The MTP plate has three locking holes and three nonlocking holes to maximize stability. The set includes the QuickFix "snap-off" screws (a) for the nonlocking portion of the plate. For the locking holes, we have 3 mm cortical screws that range in size from 10 mm - 20 mm. The interfragmentary screws are cannulated, partially threaded 3 mm screws, in 18-36 mm lengths. The instrumentation set is comprehensive and includes metatarsal and phalangeal reamers.

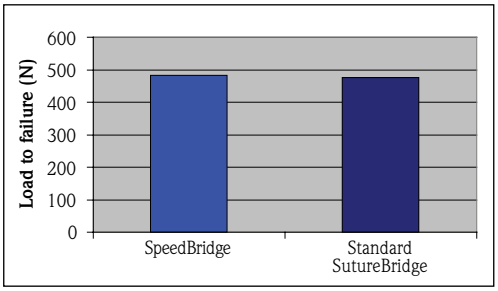
a

IN THE Loop...

SpeedBridge

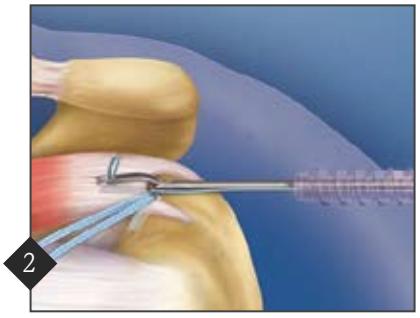
The fully-threaded SwiveLock C can be combined with FiberTape to create a quick and secure SutureBridge construct with no knots and only two suture passing steps! The result is a low profile, transosseous equivalent suture bridge that enhances footprint compression to maximize contact between tendon and bone to promote healing.

The science behind the technology…
Cadaveric testing shows that the SpeedBridge is equivalent to the standard SutureBridge in both strength and gap formation. Six matched pairs were used to compare the SpeedBridge to the standard SutureBridge. The constructs were cycled 500 times between 10 and 100N and then pulled to failure. Both constructs were only limited by tendon quality. No anchors or sutures failed.

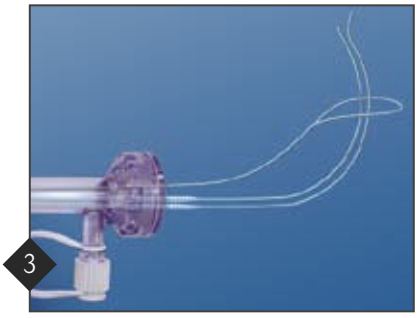


Data on file

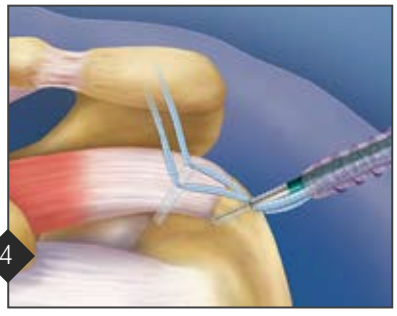
Insert a 4.75 mm SwiveLock C, preloaded with one strand of FiberTape, into a prepared medial bone socket.



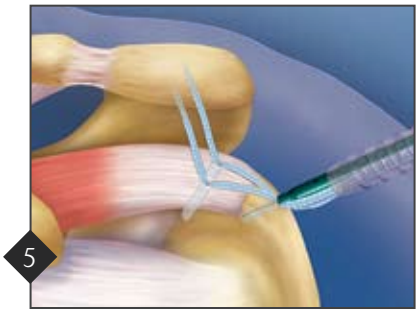
Pass the tail of a FiberLink, for use as a suture shuttle, through the rotator cuff with a Scorpion.



Load both tails of the FiberTape through the FiberLink loop and shuttle them through the rotator cuff. Repeat steps 1-3 for the second medial row anchor.



Retrieve one FiberTape tail from each medial anchor and load them through the SwiveLock C eyelet. Insert into a prepared lateral bone socket until the anchor body contacts bone. Adjust tension if necessary.

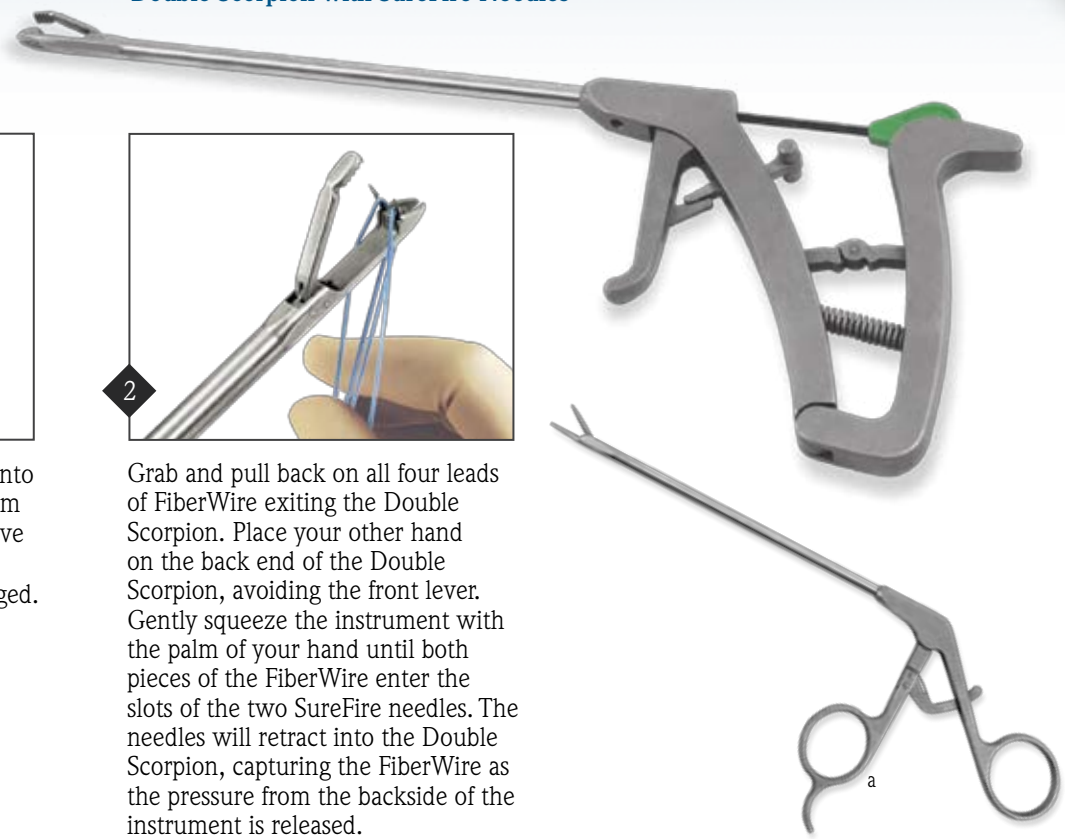


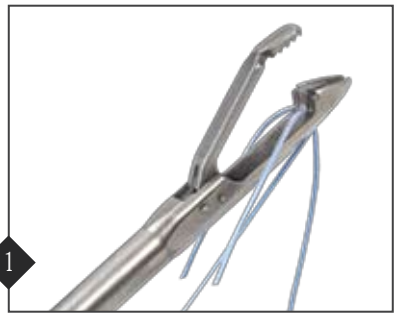
Hold the SwiveLock C thumb pad steady and turn the driver handle to complete the anchor installation.

Cut the FiberTape tails, one at a time, with an open-ended FiberWire cutter. Repeat steps 4 and 5 for the second lateral anchor.

Pointers and Pearls

Double Scorpion with SureFire Needles





1

Load 1-2 inches of #2 FiberWire into each of the two slots on the bottom jaw with the free end up. A positive snap from the suture will be felt indicating the suture is fully engaged.

2

Grab and pull back on all four leads of FiberWire exiting the Double Scorpion. Place your other hand on the back end of the Double Scorpion, avoiding the front lever. Gently squeeze the instrument with the palm of your hand until both pieces of the FiberWire enter the slots of the two SureFire needles. The needles will retract into the Double Scorpion, capturing the FiberWire as the pressure from the backside of the instrument is released.

3

Advance the Double Scorpion into the subacromial space through a lateral cannula by closing the grasper with the forward lever on the instrument. Release the lever to open the grasper to position on the tissue. Close the grasper and engage the ratcheting mechanism to maintain this position.

4

With the Double Scorpion in place, squeeze the backside of the instrument with the palm of your hand, advancing the SureFire needles and FiberWire through the tissue. The needles retract by removing pressure from the backside of the instrument.

5

Secure the passed FiberWire with the FiberWire Grasper (a) from an accessory portal while leaving the Double Scorpion in place. Withdraw the Double Scorpion out of the body and proceed with retrieving the passed FiberWire.

What's in My Bag?

Featuring: James J. Guerra, M.D.

Medical Director, NCH Sports Medicine Program, and founder of Collier Sports Medicine and Orthopaedic Center, Naples, Florida

Q. You first started using the equipment under Arthrex's C3 program over three years ago. You started with a standard definition image and then later upgraded to the HDTV image that is now available. From a surgeon's perspective, can you describe the advantages that the HDTV resolution and autoclavable optic chain provide?

A. Although the standard definition image quality was excellent, the HDTV image is truly remarkable. It's analagous to watching sports on a high definition plasma television. The Arthrex video equipment is the only one with a true digital 1080i resolution platform. All other companies claim to have high definition but the analog signal is "enhanced" or "up scaled" to high definition-like quality. Since I am an investor in my surgery center, I have been delighted with the built-in cost savings of the autoclavable camera heads and scopes. Since the equipment is autoclaved, we not only save on the costs of Steris solution, approximately $15/case, but also save because of the rapid turnover time. The autoclave time is 10 minutes versus 30 minutes for Steris. Over the course of a full OR day, this effiiciency allows my partners and me to be more productive and get home earlier to our families.

Q. Has the image quality of the autoclavable optic chain degraded in the time you've been using it?

A. Not at all. Our previous optic chain was sterilized using a Steris machine, as most other optic chains are. Over time, a build-up of deposits from the Steris develops on the lenses of the arthroscopes and camera heads and the image quality slowly degrades. With the autoclavable optic chain offered through Arthrex, this problem is completely avoided. Our image quality looks as good today as it did on the day it was first installed.

Q. From a fluid management standpoint, how has the Continuous Wave III Pump and ReDeuce Tubing System performed and has it been a cost-effective alternative over your previous fluid management system?

A. I was a staunch proponent of using the old 3M pump prior to using the Arthrex fluid management system and, being a surgeon, I initially saw no benefit to leaving my comfort zone and changing from a system that I thought worked well enough for me. After using the Arthrex system a few times, I began to realize what those benefits were. The first benefit I realized was that I was able to maintain distention and visualization even in high fluid demand situations. During ACLs, for example, I could keep distention in the joint space even after drilling a tibial tunnel. I felt that I could get performance as good, if not better, with the Arthrex pump. It is easier to set up and use. And I was using much less fluid during a procedure. This is a key point that should be made. Because of the lower fluid usage and design of ReDeuce Tubing System, my surgical team spends less time with mundane fluid tasks, such as pump set-up and changing fluid bags. They are more focused on patient care.

Q. Regarding RF and motorized tissue resection, what are your preferred OPES ablation electrodes and APS shavers and burrs for the different surgical procedures you perform and why?

A. Arthrex has both single use and limited reusable burrs and shavers. My usage has evolved into a unique hybrid system. I like sharp, fresh single use shavers and burrs for the lion's share of the procedure, but like having the availabilty of "niche" limited reusable shavers and burrs for those "once-in-a-while" applications. I call my limited reusable set my "Master Craftsman" set which is opened on every case and available to me. It is similar to the assortment of hand punches for meniscal surgery - 90% of the time all I need is an up and straight biter, but every once in awhile I need a backbiter or sidebiter. In my "Master Craftsman" limited reusable set, I keep a Round Burr, Tapered Burr, 4.85 mm Oval Burr, 4.85 mm Full Radius Resector, End Cutter, and Slotted Whisker.

continued

For shoulder arthroscopy, I open a single use 4.2 mm Bone Cutter shaver and a single use 8 flute ClearCut Burr with the clear shroud. I particularly like the ClearCut Burr since it allows me to see around the burr to more precisely remove bone. For SLAP and Bankart repairs, I love the single use ClearCut SLAP Burr, which is specifically designed for this application. For meniscal surgery, I've been impresssed with the single use 4.2 mm curved shavers which have the resection blade oriented upwards to facilitate meniscal removal. For ACL reconstruction, I use the single use 4.85 mm Round Burr on the notch and single use 4.2 mm Bone Cutter. With respect to RF, I've been very satisfied with the low profile 4 mm 90˚ Ablator. I typically run it higher than the suggested setting on preset 8 or 9 for maximal efficacy. On knees, I use the 60˚ wand and run it on the suggested setting of preset 7.

Q. You have had surgeon visitors from all over the world watch you operate using this equipment. How do you respond when asked of your sterility concerns with using Limited Reusable Shaver Blades and Burrs?

A. I emphasize the distinction between a sterilized device and a reprocessed one. The Limited Reusable Shavers and Burrs are designed for reuse, like a drill or a screwdriver. Their design and materials are meant to be cleaned and steam sterilized. Reprocessed products are single use devices that are being cleaned and sterilized by a third party for reuse. Usually, they are resterilized using ethylene oxide gas or gamma radiation; not steam sterilized in an autoclave.

Q. In addition to the Arthrex Capital Equipment's quality and reliability, how has your facility benefitted financially, on a per-case basis, since you've been using it?

A. From purely a cost perspective, when each of the component areas is added together, our facility is saving in excess of $115 per procedure. But using the Arthrex arthroscopy equipment runs deeper than pure cost savings. Because of the system's design, quality and reliability, the time we are saving between and during surgeries helps my surgical team and me be more efficient. We are able to perform more surgeries in a day, with less stress, while providing our patients with the highest quality of care using state-of-the-art equipment. That's the true benefit of using the Arthrex arthroscopy equipment.

Naples Day Surgery Experience
Case Example: SAD (cpt 29826) $516.25

Product	Savings
Autoclave	$14.75
Pump Tubing	$22.55
RF	$48
Shavers	$33

Total Savings per procedure
$118.30

STO Featured Product Information

SwiveLock C AR-2324BSLC
FiberTape AR-7237
AC GraftRope AR-2258
Meniscal Cinch AR-4500
Knot Pusher/Suture Cutter AR-4515
APS Control Console AR-8300
Master Instrument Set Case AR-2180M
Expanula AR-6569
Double Scorpion Suture Passer AR-13994
SureFire Scorpion Needles AR-13394N
FiberWire Grasper AR-13975SR
BioComposite Interference Screw, 7 mm AR-1370C
BioComposite Interference Screw, 8 mm AR-1380C
BioComposite Interference Screw, 9 mm AR-1390C
BioComposite Interference Screw, 10 mm AR-1400C
Driver, BioComposite Interference Screw AR-1996
Driver, BioComposite Interference Screw, quick connect AR-1996CD-1
ACL All-Inside Disposables Kit AR-1857S
Determinator AR-1591
LPS Screws, partially threaded, cannulated, 3 mm x 10 mm - 50 mm ..... AR-8933-10PT - 50PT
LPS Screws, partially threaded, cannulated, 4.5 mm x 20 mm - 80 mm ..... AR-8945-20PT - 80PT
LPS Screws, partially threaded, cannulated, 6.7 mm x 40 mm - 120 mm ..... AR-8967-40PT - 120PT
Mini TightRope FT AR-8912DS
MTP Plate, contoured, short, left AR-8944CL-S
MTP Plate, contoured, short, right AR-8944CR-S

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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