

Editorial



Fig 1. DJ operating with the historic O'Connor operating scope, circa 1976. Note the resident (Dr. John Birch) is watching the procedure with the articulated teaching arm. At the time, that was progress!

Well, it happened. Recently I was asked to speak on “My reflections on 30 years of sports medicine and arthroscopy.” I thought that you only got asked to do that when you are really old and experienced, like my mentor Bob Jackson. It’s funny I don’t feel old. Guess I haven’t looked in the mirror lately. Well after the initial shock, it was kind of fun looking back on where we were 30 years ago, and where we are now. Arthroscopy ranks as one of the great achievements of this century, right up there with joint replacement and open reduction and internal fixation of fractures. We owe so much to Bob Jackson who worked so hard against all the naysayers. I can still remember being told by one of the senior staff at our institution, “you should open that knee up like a man”. Bob persisted in his passion, and now arthroscopy is one of the commonest orthopaedic procedures performed. It certainly has been rewarding to practice arthroscopy over these past 30 years, and to witness the advance of arthroscopic assisted procedures.

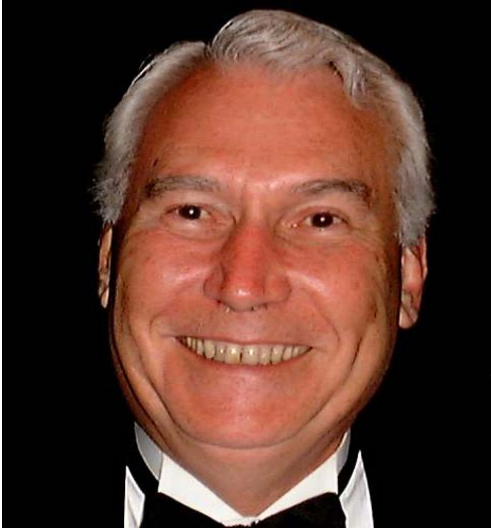


Fig 2 Robert Jackson, the originator of arthroscopy in North America.

The 10 secrets to successful life in orthopaedics.

One of my former fellows, who will remain unnamed, accused me of not telling him all the secrets! He thought that I was holding something back. I didn't tell him that I usually can't remember all ten. So, here they are, finally written down.

1. Maintain a passion for what you do
2. Do what you do best, but above all do no harm
3. Listen, listen, listen
4. Accept change – don't be the first or last
5. Maintain high energy – fitness
6. Develop communication skills
7. Be humble – keep the ego in check
8. Develop a positive attitude
9. Keep the Focus
10. Learn how to balance family, work, and play

Journal Club Articles

Arthroscopy Vol 19 No 8 October 2003

P 815 Laser Assisted Thermal Capsulorrhapy

Thomas J Noonan MD, John M Tokish MD, Karen Briggs MBA, and Richard K Hawkins MD.

This report is a consecutive case series of 60 shoulder repairs of instability treated with standard repair techniques and the use of laser to reduce the volume of the shoulder capsule. The instability was anterior in half the patients, and the remainder were posterior, and multi-directional. The patients were evaluated at an average of 38 months post operatively with ASES scale, pain, recurrent instability, function, and patient satisfaction.

The 51 of 60 shoulders that were available for follow-up were divided into the pathology of the shoulder. The best ASES scores were in the anterior instability with Bankart repair, 94, and without Bankart, 83. Eighteen percent of the patients required further surgery during the follow-up period. Eight failures due to recurrent instability occurred in the MDI patients, and one in the anterior group. The failure rate for anterior instability was 4%, 20% for posterior, and 39% for the MDI.

This study clearly shows that the use of heat to reduce to volume of the capsule is efficacious in the treatment of the anterior and posterior shoulder instability when combined with the standard operative procedures such as Bankart repair. In this series, as with others, the use of heat for the multi-directional instability had poor results.

This paper is timely as there is a trend away from the use of heat to shrink the capsule of the shoulder due to the reported complications. The authors did not report any catastrophic problems such as producing a large hole in the capsule, but were honest about the high failure rate for the MDI patient. The use of heat as an adjunct to the Bankart and labral repair is effective and in the authors hands had very few problems.

P 825 Description of a new Endoscopic Posterior Cruciate Ligament Reconstruction and Comparison with a 2-incision technique.

Yasumitsu Ohkoski, Shinya Nagasaki, Kazuki Yamamoto, Noboru Shibata, Ryosuke Ishida, Tomyuki Hashimoto, and Shigeru Yamane.

In this consecutive case series, the conventional 2 incision technique was compared to an endoscopic technique. The conventional 2-incision technique using hamstring tendons was performed in 43 cases from 1992-1995. In the endoscopic technique (90 patients), the tibial tunnel was drilled from the anterolateral tibia cortex to the footprint on the back of the tibia using a specially designed guide. The guide is inserted around the back of the tibia from the lateral side, between the tibia and fibula. The blind femoral tunnel is drilled from inside out using a unique drill bit. The hamstring tendon is fixed on the femoral side with an endobutton and on the tibial side with a screw post. In this report, 51 patients were reviewed using the IKDC form. The functional outcome, the time to achieve 90° of flexion, isokinetic muscle strength, and the stability were compared in the 2 groups. The IKDC evaluation was the same in both techniques. However the patients achieved flexion faster, had better isokinetic strength scores, and were more stable as measured by the KT-1000 arthrometer.

The author feels that by applying the concepts from the ACL, that is endoscopic single incision techniques, he has improved the outcome of PCL reconstruction. The technique of drilling from the anterolateral aspect of the tibia certainly reduces the killer tunnel angle on the posterior aspect of the tibia. This has been shown by Bergfeld[1] to lead to thinning and fraying, and potential late failure of the graft. The author also drills the femoral tunnel with the knee in hyperflexion, reducing the femoral angle of the graft. I think that this technique has improved the transtibial technique of PCL reconstruction. I would encourage the author to consider a double bundle femoral socket to improve the stability over a complete range of motion of the knee.

References

1. Bergfeld, J.A., McAllister, D. R., Parker, R. D., Valdevit, A. D., Kambic, H. E., *A biomechanical comparison of posterior cruciate ligament reconstruction techniques*. Am J Sports Med, 2001. **29**(2): p. 129-36.

What's new from the fall AANA course?

This year there were a couple of things that attracted my attention in the exhibit area.

Osteobiologics

This company has been laying low for the past year or so, but now has a synthetic plug to back fill the defect from harvesting a osteochondral plug.

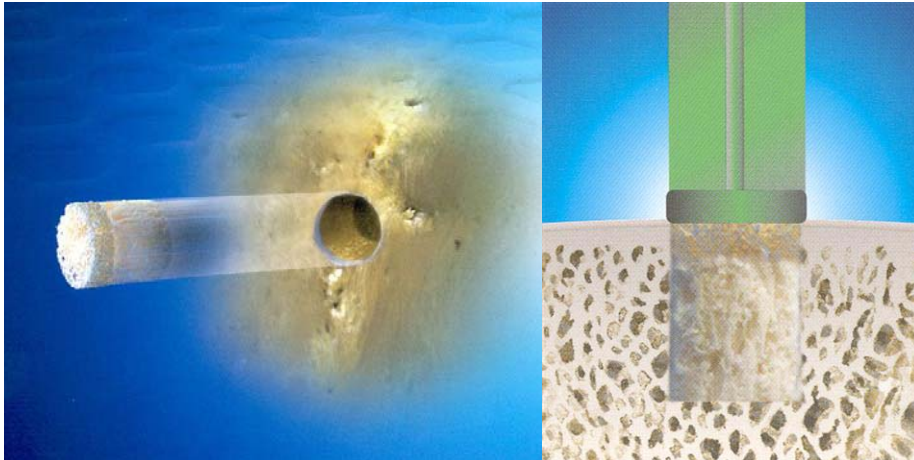


Fig 3 and 4. The synthetic plug used to back fill the harvest site defect.

The plug is composed of PLA, PGA and calcium sulfate. They are a porous, resorbable scaffold allowing in-growth of new tissue. The gross and microscopic examination of the implants in goats at 6 weeks, 3, 6 and 12 months showed that the plug had resorbed and been replaced with host tissue.



Figure 6. Histological appearances at 6 weeks near center of the osteochondral defect in trochlea (Trichrome Stain), where hatch marks show original lesion size.

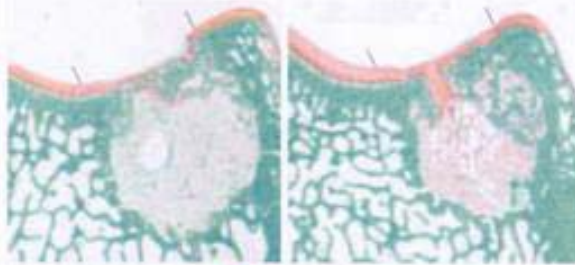


Figure 7. Histological appearances at 6 months near center of the osteochondral defect in the trochlea (Trichrome Stain) where hatch marks show original lesion size.

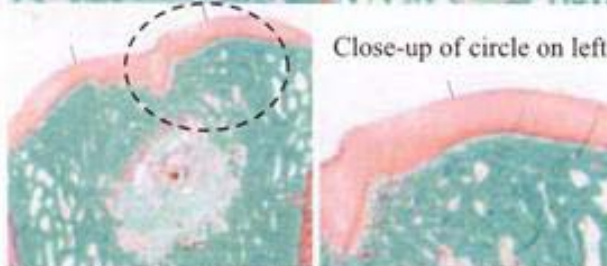
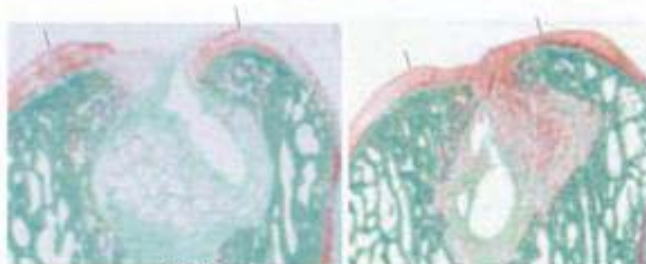


Figure 8. Histological appearances at 6 months near center of the osteochondral defect in the femoral condyle (Trichrome Stain) where hatch marks show original lesion size.

Fig 5. The histological appearance of the implant in goats. (courtesy of OBI)
I believe that the future is in a type of resorbable scaffold that can be implanted with cells to reproduce the damaged tissue. This is a good first start to show that

HemiCAP – by Arthrosurface

This is a unique method to perform a limited hemi-arthroplasty. At the current time it is limited to the shoulder and hip. The instruments are well designed and allow for precise placement of a Titanium coated chrome cobalt metal implant.

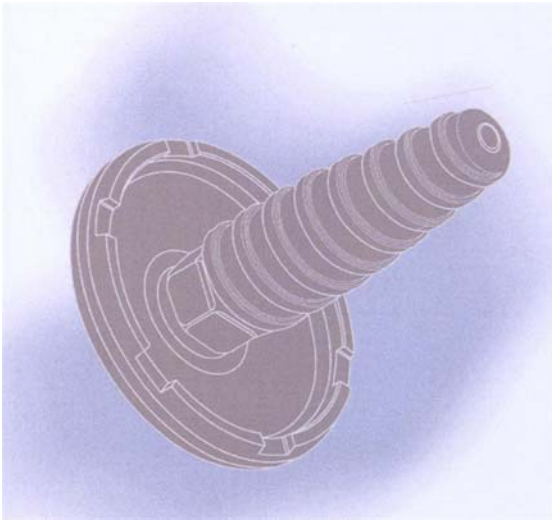


Fig 6. The metal screw-in implant to resurface localized full thickness defects.

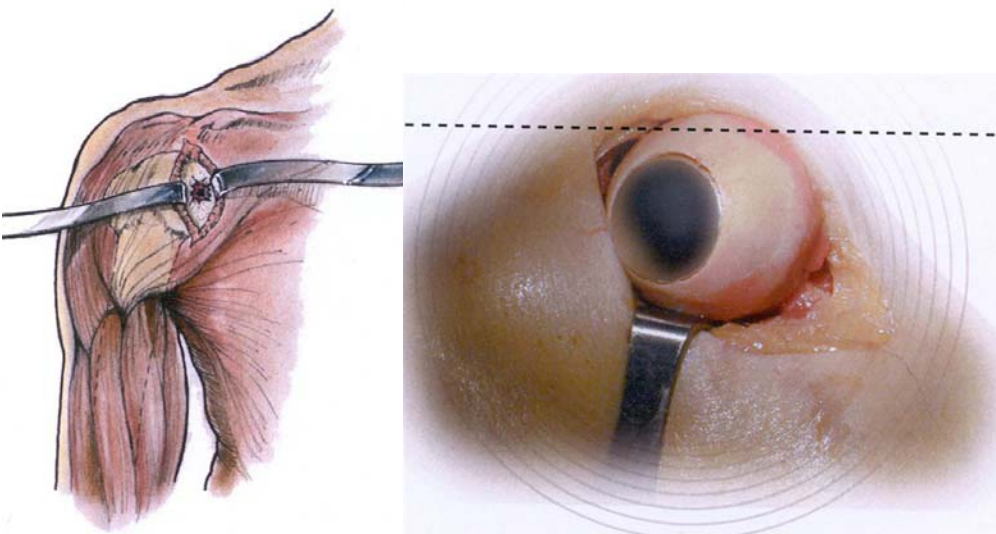


Fig 7 and 8. At the present time the implant is inserted by an arthrotomy and only indicated for the shoulder and hip.

Go To My PC

Have you ever been away from your main computer and needed a file right away. Well now you can connect over the Internet and view or transfer that file to another computer with 'go to my pc' software. The first step is to open: www.gotomypc.com and sign up for the single user account. The cost is \$179 per year. This allows you unlimited access and transfer of files from home or office over any internet connection. The software has to be loaded on the main computer and then you set up a secure password on the web site www.gotomypc.com You simply open up the web site, enter the password and viola, there is your home or office computer. This is a huge advantage for someone like me, who travels a lot. There are numerous high speed wireless connections in airports and airport lounges that allow me to transfer files from my server to my laptop. Now there should be no excuse for showing up without the rightt presentation.

AANA Fall Meeting 2003 New Orleans, Louisiana.

By Dr. Andrew Pickle

The AANA 22nd Annual Fall Course was held on November 13-16th in New Orleans this year. As sports medicine/arthroscopy fellows we found it very educational and entertaining to say the least. It is a great opportunity for everyone to learn from the experts, exchange ideas, see the newest products and make new friends. It is a very busy four days with plenty of lectures, focused demonstrations, cadaver labs and one-on-one tutorials. We would like to share some of the highlights we experienced.

First of all the CD-ROMs of the cadaver labs were sent out to the participants in advance. This was a great idea because it gave you the opportunity to review these prior to the course which made the lab time more efficient. These CDs were very well made and I am sure they will be a valuable reference for years to come.

We had the opportunity to attend two focus demos. Both were excellent and would be highly recommended if they are offered again at future meetings.

They are small groups with 10-15 participants and two expert faculty members who teach their technique on a cadaver and generate excellent discussion.

Osteotomy Techniques in Complex Knee Reconstruction

This focus demo was presented by Drs. Peter Fowler and William Sterett.

Dr Fowler demonstrated his technique with the Arthrex Opening Wedge Osteotomy™. Some pearls of wisdom he shared included; performing the osteotomy at the level of tibial tubercle which has not give him problems with patella baja. The most common source of graft he uses is allograft (ie femoral head from bone bank), only rarely will he use autograft. And if the opening is small, for example < 7.5mm (even< 1cm) graft is not necessarily required. If the lateral cortex is breached the construct is less stable, thus a larger plate &/or more screws are required. To minimize the risk of an intra-articular fracture a more horizontal osteotomy can be used especially if large correction is needed. Despite this, if you do encounter a small intra-articular fracture during the opening phase; simply place a screw across the fracture to prevent displacement prior to proceeding with the opening. Occasionally the MCL will be very tight with the opening and it can simply be “pie-crusting” to relieve this.

If you encounter patient with varus, medial OA and mild ACL instability, Dr Fowler demonstrated how you can decrease the tibial slope (normally 7° posterior) by opening slightly more posteriorly than anteriorly. This is done by placing the plate more posteriorly +/- adding a staple anteriorly. By doing this the femur will sit slightly more anterior on the tibia and thus make anterior tibial displacement less symptomatic. Mild PCL instability can be addressed by increasing the slope with more opening anterior.

Dr Sterett gave a demonstration on how to use an adjustable external fixator to correct large angular deformities, ie > 20°. The ex-fix pins are placed, a percutaneous osteotomy is made and after a latency period of 5-7 days a gradual opening is performed adhering to the principles of distraction osteogenesis. During the distraction phase the opening is adjusted 1mm/day. Once the desired opening is achieved a consolidation phase follows which lasts twice as long as

the distraction phase. Therefore for a 2 cm opening the ex-fix would have to be worn approximately 2 months.

Posterior Cruciate & Posterolateral Knee Reconstruction

Drs. Fanelli and gave this focus demo. Dr Fanelli first demonstrated his technique of PCL reconstruction. His preferred graft is an Achilles allograft (without the bone block because it is \$500 less expensive). He prepares all his own grafts and stresses tapering the ends the ends to ensure smooth graft passage. He performs a single tunnel PCL reconstruction using a posteromedial safety incision to protect the neurovascular structures and ensure the tunnel exits 1 cm below the joint line. Tricks he demonstrated for his single femoral tunnel included using a second low anterolateral portal to insert a drill bit to act as his guide. Place the drill bit at 10-11 o'clock position and just off the articular surface to act as the guide for your wire. After drilling both cortices he passes the graft antegrade through the femur, joint and tibia. Femoral fixation is with a BioScrew via low anterolateral portal placed anterior to the graft. An anterior drawer is performed next and the graft is fixed on the tibial side with a BioScrew at 70⁰ flexion. In his hands a PCL can be performed in 35 minutes!

Dr Kevin Plancher demonstrated the posterior inlay technique for PCL reconstruction. Using a Burke & Schaffer approach the posterior tibia is easily exposed between semimembranosus and medial gastroc. The medial gastroc is retracted laterally to protect "Big Red" and can be held there with k-wires. After using osteotomes to prepare the bed the bone block is attached with a 4.5mm cortical screw, not the 6.5 cancellous because of a higher risk of splitting the bone block. If it is split by accident it can be fixed with 2 bone staples. The femoral tunnel is the surgeons' preference.

Posterolateral reconstruction using split biceps femoris tendon transfer was also demonstrated. This is Dr Fanelli's preferred technique for reconstruction of the LCL and popliteofibular ligament.

Throughout the demos there was plenty of time for questions and answers. Thanks to all the instructors and their support staff.

Technical Exhibits

Between talks, labs and demos we tried to find time to visit the technical exhibits. DJ asked us to comment on the new equipment available, but as new fellows it all seems new to us. However some things stood out.

The Autocuff System

This innovative system produced by Opus Medical could aid greatly those doing arthroscopic rotator cuff repair. The Smartstitch™ suturing device can pass an incline mattress suture in a few seconds with a gun held with one hand. Combine this with the Magnum™ knotless fixation implant to get secure bone purchase without the need for arthroscopic knot tying. You can adjust the tension of the repair with the Magnum™ depending on the quality of the tissue.

RetroScrew™

Arthrex has developed this system to ensure aperture fixation for grafts in ACL reconstruction. By using a small Fiberwire™ tethered femoral and tibial retroscrews (bioabsorbable screws) are pulled into the joint with a shoehorn cannula. Once in the joint the tethered screw is pulled onto a narrow screwdriver in the tibial tunnel and screwed into the femur and tibia ensuring aperture fixation at both tunnels.

Med Images Integrated Documentation Services

Med Images offers completely electronic operative note package. Once the software is set up in your OR suite the surgeon performs his/her case taking as many images as desired. At the completion of the case the surgeon reviews the images and keeps only the most important ones. These images can be printed off in the OR and be used for dictation purposes. Upon completion of the

dictation the OR note and selected images are electronically sent to Med Images where the final OR note with images is made. This final OR report can now be sent to the surgeon, hospital, etc. This is a option for those interested in a paperless office.

**AANA fall course summary by Dr. Monika Volesky
Nov 13-16, Hilton Riverside, New Orleans, Louisiana**

A set of course objectives was outlined in the final program for the meeting. This encompassed what each participant should feel comfortable with at a lecture or lab's end.

The lectures

The lecture series was held over 3 days, with 4 separate courses being offered: knee, wrist & elbow, foot & ankle, and shoulder. The lectures were given before the respective lab sessions, which were helpful, as they give an overview of the topics to be covered in more detail in the labs.

The knee lectures were an intense 5-hour marathon which covered topics such as: how to avoid common problems with ACL reconstructions, pearls of revision ACL surgery, pros & cons of PCL reconstruction techniques, options for unicompartmental arthritis, treatment algorithms for patellar instability, treatment options for chondral defects and meniscal lesions. Interestingly, the debate with respect to the best method of PCL reconstruction rages on. There continues to be no consensus or 'gold-standard' treatment for PCL surgery, as several surgeons with significant experience in these reconstructions each emphasized their preferred technique. A similar debate swirls around the topic of unicompartmental arthritis. Advocates of osteotomies, unicompartmental arthroplasty, and Unispacer highlighted the advantages and disadvantages of those techniques. It was fascinating to note, a show of hands in the room

revealed that more surgeons than before are using the opening wedge osteotomy in their arsenal.

The labs

The cadaveric labs were 3 hour sessions, which were set up to allow participants to practice specific procedures and techniques. The participants were paired to a specimen, and allowed to determine individually which procedures they would like to perform. Resources available included the cadavers, implants and tools from several different companies, as well as radiographic imaging. Faculty circulated to provide assistance, valuable tips and surgical pearls. Occasionally, they would demonstrate a technique from beginning to end for those who wanted to see it done in an expert's hands. Representatives from the industry were readily available to show the proper use of their tools, instruments and implants.

In the knee laboratory, a number of procedures were undertaken such as: meniscal repair with sutures and various implants, ACL reconstruction using a variety of grafts and fixation techniques, PCL reconstruction with all its permutations, osteochondral autografts, and opening wedge tibial osteotomies. For those who persisted towards the end of the lab sessions, dissection of the cadaver specimens provided a refresher in anatomy and a valuable view of tunnel placement and graft fixation.

There were 2 shoulder laboratory sessions, which allowed participants to experiment with portal placement, address Bankart and SLAP lesions, and practice rotator cuff repairs using a variety of techniques. Especially useful were demonstrations of suture management in rotator cuff repairs by faculty members who circulated.

Other

Just outside of the lab locale, was an area with models available for knot-tying practice. There were many stations available, and it appeared quite popular, especially before the shoulder lab sessions. Unfortunately, those who were rusty with their arthroscopic knots, had little guidance available in the immediate area. It would be helpful to have step-by-step illustrations and how-to guides available adjacent to the workstations, and perhaps even a video corner in the vicinity.

Although we did not have a chance to attend, an ALEX shoulder model lab was offered. This is particularly useful to try new techniques and equipment without being limited by portal placement and problems visualizing the joint. Anchor placement, tissue and suture management and knot-tying, as it relates to arthroscopic stabilization and rotator cuff repair, are the main elements covered and practiced in these sessions.

Upcoming Events

AAOS annual meeting 10-14 March 2004 San Francisco

Contact www.aaos.org

AANA spring meeting 21-25 April 2004 Orlando Florida

Contact www.aana.org