

# clinical conduit

by Ed Mulligan, PT, DPT, OCS, SCS, ATC

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Last Course for  
2010  
Still a few registra-  
tion spots left

## 2010 Schedule



**Cervical Course**  
Nov 13-14, 2010  
- Plano, TX



## 2011 Dates

### Advanced Orthopedic Physical Therapy Series

- Part 1: Manual Therapy - Mar 5-6
- Part 2 Cervicothoracic - Apr 16-17
- Part 3 Upper Extremity - Jun 4-5
- Part 4 Lumbopelvic - Jul 16-17
- Part 5 Hip/Knee - Aug 27-28
- Part 6: The Lower Quarter - Oct 15-16

A detailed description of the course content and learning objectives is available at our web site — [www.continuing-ed.cc](http://www.continuing-ed.cc)



## Open Laterjet Procedure for Anterior Glenohumeral Instability

Surgical correction of anterior shoulder instability generally falls into two broad categories - soft tissue repair or bony reconstruction. For patients that have significant bony deficiency (> than 20% of the glenoid's surface area is missing) a bony procedure is necessary to ensure surgical success and prevent recurrent instability. The operation that is recommended is called the Laterjet-Bristow Procedure. The technique transfers the coracoid process (along with the intact short head of the biceps and coracobrachialis) into the area of the bony defect. The coracoid graft is shaped, contoured, and secured with screw fixation to fill the bony defect. The attached tendons serve as a dynamic sling to further enhance stability in provocative positions of elevation.

Like any surgical procedure there are risks for complications. The most commonly cited concerns with this coracoid osteotomy procedure are non-union, fixation failure, musculo-taneous nerve palsy, subscapularis dysfunction, and/or loss of external rotation. The loss of external rotation may be a concern if the patient's goal is to return to overhead athletic activity. Fortunately this deficit is usually not more than 5-10°.

Despite this surgical intervention being classified as a bony procedure the therapist needs to protect the soft tissues relevant to the injury and surgery. Like all anterior stabilization procedures the subscapularis has to be compromised to access the pathoanatomical area. Passive external rotation and extension and resistive internal

rotation of the shoulder should be carefully controlled for the first 6-8 weeks following the surgery. It may be prudent to speak with the surgeon regarding the point of intra-operative tension during external rotation before attempting to acquire external rotation ROM posterior to the scapular plane or in increasing positions of abduction. When strengthening activities commence one should remember that the shoulder and elbow flexion activities should be of low intensity to minimize undue stress on the healing coracoid.

An abridged post-operative protocol can be found on page 2.

- continued on page 2

## The Art of the Knee Examination

There was a wonderful editorial published in the *Journal of Bone and Joint Surgery* a couple of months ago that highlighted an emerging trend in the field of orthopedic medicine. The article was written by Dr. Donald Shelbourne from Indianapolis, IN. I first became aware of his work when he pioneered much of our current knowledge regarding the value and safety of accelerated rehabilitation protocols following ACL reconstructions over 20 years ago.

In this forum article he presents the current trend towards reliance on technology - telling of stories he's heard from patients that have had surgical procedures based on imaging studies alone. He observes the increased degree of surprise when one of his patients is asked to wear shorts as a part of their knee examination. They found it hard to believe that the physician would need to touch their knee as a part of their decision-making progress. Because of these observations he decided to conduct a survey to describe the current tendencies of clinicians in their knee examination protocols. Specifically he wanted to know how many of them ordered X-rays or MRIs prior to the exam, the percentage of time the knee was exposed for direct physical examination, and how often the uninjured knee was evaluated for direct comparison. The results on page 3 are quite interesting.



continued on page 3

## Laterjet Surgical Procedure continued ...

### REFERENCES

Bajracharya AR, et al. Treatment of recurrent anterior dislocations of shoulder by Laterjet-Bristow operation: an experience. *J Nepal Med Assoc*; 2007. 46(168):189-93.

Hovellius L, et al. 118 Bristow-Laterjet repairs for anterior dislocations prospectively followed for 15 years. *J Shoulder Elbow Surg*. 2006; 15(3):279-289.  
<http://www.shoulderdoc.co.uk/article.asp?article=912>.

Matthes G, et al. Oldie but goodie: Bristow-Laterjet procedure for anterior shoulder instability. *J Orthop Surg (Hong Kong)*. 2007. 15(1):4-8  
<http://www.brighamandwomens.org/RehabilitationServices/Physical%20Therapy%20Standards%20of%20Care%20and%20Protocols/Shoulder%20-%20Laterjet%20Protocol.pdf>



### Phase I - Immediate Phase during Post-Op Weeks 0 to 3-4:

Strict shoulder immobilization in sling with passive and active assisted active range of motion at the elbow, wrist, and hand. Some surgeons may allow very gentle external rotation PROM in the plane of the scapula up to about 30° using the first sense of tension as the guide. Scapular clock exercises with arm in sling.

### Phase II - Intermediate Outpatient Therapy Phase during Post-Op Weeks 4-8

Begin weaning from sling and progress shoulder passive ROM. Active assistive and passive elevation (pulleys and wand exercises) in sagittal and scapular planes with goal of 150 degrees by end of 2nd month. Manual therapy to ensure good posterior capsular mobility and full internal rotation ROM. Slow progression of external rotation ROM with goal of 5-10° improvement each week. Initiate rhythmic stabilization drills in protected arcs of motion, strengthen axioscapular muscles, and begin low intensity, high repetition shoulder elevation progressive resistance exercises (no heavy lifting or plyometrics).

### Phase III - Strengthening Phase during Weeks 9-12

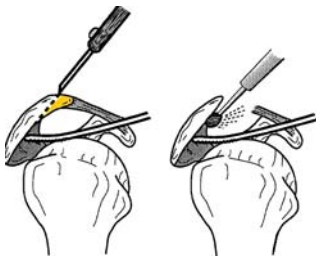
While still avoiding stress on anterior capsule, initiate bicep curls with light resistance, internal and external rotation strengthening, plyoball exercises in protected positions and arcs of motion, and progression to scapular and shoulder PNF strengthening activities in an appropriate range.

### Phase IV - Overhead and Return to Activity Phase after 3 months

Work towards full terminal ROM in all planes and progress to weight training with appropriate anterior capsular stress precautions (all activities anterior to scapular plane where you can see your hands and elbows within your peripheral vision).

*Do you have good outcomes in patients referred after shoulder acromioplasty procedures? If so, what are the keys to your rehab?*

J.S., PT



Vitale MA, et al. The rising incidence of acromioplasty. *J Bone Joint Surg Am*. 2010 Aug 4;92(9):1842-50.

Haahr JP, et al. Exercises may be as efficient as subacromial decompression in patients with subacromial stage II impingement: 4-8-years' follow-up in a prospective, randomized study. *Scand J Rheumatol*. 2006 May-Jun;35(3):224-8

Haahr JP, et al. Exercises vs. arthroscopic decompression in patients with subacromial impingement: a RCT in 90 cases with a one year follow up. *Ann Rheum Dis*. 2005 May;64(5):760-4.



## Question of the Month: Acromioplasty

I've seen patients at both ends of the outcome continuum following an arthroscopic acromioplasty. I've had a few quickly regain their pain-free range of motion with significant relief of their pre-operative symptoms and I've seen others who struggle to improve. I'm not sure there is a specific rehabilitative approach that guarantees a positive result – it may have to do more with why the patient needed the surgery in the first place.

As its name suggests, an acromioplasty is a surgical procedure that is designed to reshape the acromion. For patients with a type II (curved) or type III (hooked) acromion, there can be compressive impingement on the soft tissues that occupy the subacromial outlet. If this is the primary cause of the patient's complaint then the surgical procedure should clear the space and

minimize mechanical impingement when the arm is elevated. However, if the true root of the problem is a tensile overload or progressive degeneration then this surgical procedure does not really address the underlying pathology and may explain the poor outcome for some.

In a recent article from the *Journal of Bone and Joint Surgery*, Vitale, et al, report on the dramatic rise in the frequency of this surgical intervention. Over the past 15 years there has been nearly a four-fold increase in this operation. Additionally, they found that acromioplasties were done 2.4 times more often when compared to other orthopedic outpatient surgical procedures.

I think the real question is how many of these patients really need this procedure? Hahr, et al, has shown in prospective randomized trials that exercise therapy is as efficient as subacromial arthroscopic decompression

(SAD) in patients with stage II impingement at a 4-8 year follow-up and SAD was **not** superior to a program of "physiotherapy" aimed at strengthening the stabilizers of the shoulder. Other authors have found similar improvements in pain and function for both surgical and non-operative interventions with the only difference being the higher cost of surgery.

I think it may be that all of us are too impatient in letting the patient correct underlying impairments and poor postural habits that perpetuate the condition. I believe (whether the patient is seen pre- or post-operatively the key to treatment is modalities to control initial pain and inflammation followed by manual therapy to the cervicothoracic spine, axioscapular strengthening, and eccentric training of the rotator cuff muscles.

Questions you would like addressed in a future issue can be sent to [mulliganpt@tx.rr.com](mailto:mulliganpt@tx.rr.com)

## Cardiovascular Screening



One of my orthopedic residents led our students in an interesting journal club discussion last month regarding the physical therapist's practice of performing cardiovascular screening on patient's presenting to an out-patient orthopedic clinic. We chose this article be-

cause it coincided with the student's current class in cardiopulmonary management and wanted to highlight how these important skills and knowledge cross over into an arguably lower risk subset of patients.

One of the authors, Dr. Tim Noteboom was my advisor during my transitional DPT program and is an advocate for our profession being more involved in wellness and fitness as he believes this is congruent with our desire to achieve direct access status.

Cardiovascular (CV) disease is a major health concern in the U.S. with approximately 1/3 of adults suffering from hypertension. Even more alarming is that it is estimated that 30% of these individuals are undiagnosed.

This article was a descriptive survey of the practice tendencies of PTs in an out-patient orthopedic setting. It revealed that less than half of the time do we screen for CV health with over 1/3 of the respondents reporting that this is unimportant for their patient population. As my good friend and colleague, Dr. Ross Querry, tells our students - "these must be the patients that you treat that don't have a heart or lungs".

Suffice to say this is a critical necessity for any patient that will have an aerobic activity prescribed as a part of their rehabilitation program. It was interesting in this survey to find out that we utilized aerobic activities in 38% of our patients but only bother to baseline their CV status 4% of the time. Forget that we might identify a high risk patient in our screen - how can we dose the activity or measure positive change if we don't baseline their starting point?

The article provides the PAR-Q screening tool in the appendix which is an easy tool to help you screen for patients that need medical clearance prior to initiating a fitness program. Also, here is a link to a copy of the ACSM/AHA's screening tool - [http://bfec.kenyon.edu/Healthy\\_Kenyon/AH-A-ACSM.pdf](http://bfec.kenyon.edu/Healthy_Kenyon/AH-A-ACSM.pdf) to use in clinical practice.

It seems to me this article should be required reading for any PT that wants to practice in a direct access environment. It can be found in the November 2005 issue of JOSPT.

## Knee Examination Art continued -



361 patients were surveyed who presented with an array of knee pathologies. They had been previously evaluated by a variety of doctors (chiropractors, emergency care and primary care physicians, and orthopedic surgeons). Overall only 54% had their patient dress for full exposure of the knee during a previous consultation. For the knee examination, 87% touch the involved knee, 37% touched the uninvolved knee, 64% acquired an x-ray, and 51% ordered and MRI scan. Specific to orthopedic surgeons, 63% exposed the knee, 89% performed direct palpation, 37% touched the non-involved knee, 76% ordered x-rays, and 68% acquired an MRI. Of the 22 orthopedic surgeons who did not touch the injured knee in the examination, 16 (73%) did order an MRI. Of the 37% of orthopedic surgeons that did not expose the knee the vast majority (79%) evaluated the involved knee over their clothing.

Dr. Shelbourne was quite alarmed as he believes (and I think all PTs and ATCs would agree) that any knee examination should be inclusive of direct palpation of both the involved and uninvolved sides for comparative purposes. Rehabilitation specialists are particularly partial to direct examination findings as we don't routinely have the immediate luxury of imaging studies from which to base our treatment plans .

Direct visual inspection tells us a lot about swelling, atrophy, and obvious structural asymmetries or anomalies. We can use palpation as a reasonable method to rule out some conditions due to its high sensitivity. As Dr. Shelbourne points out we'd never just evaluate one lung, one hand, or one eye - we should always evaluate both knees for a full picture of the patient's complaint.

Some may argue that for an experienced examiner, a thorough history and patient interview is often quite precise in establishing a diagnosis; however, these suspicions must be corroborated by a physical exam that looks for specific impairments that result in suboptimal function.

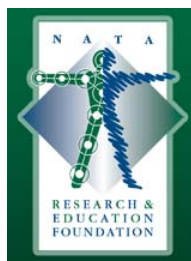
Rehabilitation clinicians generally understand the value of our "tactile" influence but it would interesting to know if we are also guilty of over-relying on technology and/or physician diagnosis and not using our palpation skills as we were all taught in school. Always remember that imaging studies can identify anatomical abnormalities, and label the pathology but it is our only the clinical exam that puts the injury into a rehabilitative context.

### Reference:

Shelbourne KD. The art of the knee examination: Where has it gone? *J Bone Joint Surg Am.* 2010 Aug 4;92(9):e9



### "Featured Internet Link"



### NATA Research & Education Foundation

<http://www.natafoundation.org/education/building-blocks-for-clinical-practice>

The "Building Blocks for Clinical Practice" practice was launched by the NATA's Research and Education Foundation earlier this year and consists of a series of fact sheets for athletic trainers to use in daily practice. The topics change with each issue and are published every other month on the NATA Foundation website. The first two were on bacterial and fungal infections of the skin.

Previous issues are archived at  
[www.continuing-ed.cc/newsletter.htm](http://www.continuing-ed.cc/newsletter.htm)



Too often we enjoy the  
 comfort of opinion without  
 the discomfort of facts.

  
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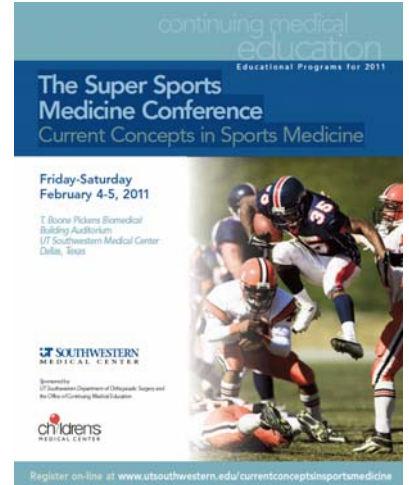
| February 2011 |     |     |     |     |     |     |
|---------------|-----|-----|-----|-----|-----|-----|
| Mon           | Tue | Wed | Thu | Fri | Sat | Sun |
| 31            | 1   | 2   | 3   | 4   | 5   | 6   |
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| 14            | 15  | 16  | 17  | 18  | 19  | 20  |
| 21            | 22  | 23  | 24  | 25  | 26  | 27  |
| 28            | 1   | 2   | 3   | 4   | 5   | 6   |



advances in orthopedic and primary care sports medicine and review common upper extremity sports related injuries. The focus is to provide new information and debate controversial topics within the field of sports medicine. The information should enhance any clinician practicing sports medicine. Hope to see you there.

## Save the Date

Next February, the Orthopedic Surgery Department at UT Southwestern Medical Center is providing an education program titled "**Current Concepts in Sports Medicine**". The conference is designed to educate attendees on recent



## Featured Home Study Program Knee Osteoarthritis

A couple of interesting studies have been published recently that evaluated the association of knee osteoarthritis at 10-15 years following an anterior cruciate ligament injury. Unfortunately, both studies seem to indicate what we may have already innately suspected - there is a significant increase in the prevalence, particularly if the original injury had concurrent meniscal or chondral damage.



### Home Studies Now Available Study and learn at your own pace at home!

|  |                |
|--|----------------|
| Medical Screening for the PT             | .3 CEUs        |
| <b>Knee Osteoarthritis</b>               | <b>.2 CEUs</b> |
| Pharmacology for the PT                  | .2 CEUs        |
| Radiology for the PT                     | .3 CEUs        |
| Goniometry 101                           | .2 CEUs        |
| Foot-Ankle Anatomy                       | .3 CEUs        |
| Achilles Tendinopathy                    | .2 CEUs        |
| Lateral Ankle Instability                | .2 CEUs        |
| Plantar Fasciitis                        | .2 CEUs        |
| Knee Meniscal Injuries                   | .2 CEUs        |
| Orthopedic Hip Injuries                  | .2 CEUs        |
| Principles of Joint Mobilization         | .2 CEUs        |
| Functional Anatomy of the Shoulder       | .3 CEUs        |
| Scapular Significance: Ortho Perspective | .2 CEUs        |
| Proximal Humerus Fracture Rehab          | .2 CEUs        |
| Subacromial Impingement Syndrome         | .2 CEUs        |
| Examination-Treatment of Hand/Wrist      | .3 CEUs        |
| Ethics and Professional Responsibility   | .2 CEUs        |

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The issue here is that many of these patients are displaying arthritic change at a relatively young age. Given that the natural history of the injury may predispose you to osteoarthritis it is important to ensure that we help patients minimize other known osteoarthritis risk factors. Maintenance of normal hip mobility and prevention of even the slightest knee flexion contractures are of paramount importance. Maintaining an appropriate body mass index and ensuring good strength and proprioceptive control are critical as well. Orthotics and unloader bracing may be indicated if there is unicompartmental disease magnified by malalignment. Neither of these studies implicated the type (or lack of) surgery as a consistent predictor of arthritis indicating that the altered course of knee health is somewhat pre-determined following this type of ligamentous trauma. Patients need to understand that a surgical intervention for knee instability can only promise the possibility of restoring knee stability - not the prevention of OA. If you need a nice overview on the evaluation and management of knee osteoarthritis you might find our new home study titled "Knee Osteoarthritis" to be a good resource. This study is available free of charge on our web site at [www.continuing-ed.cc/homestudy.htm](http://www.continuing-ed.cc/homestudy.htm). If you need CEU credit it is available by completing a post-test for a reasonable fee. All of our home studies are approved for clinicians licensed in Texas and Oklahoma.

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