

clinical conduit

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Cervical Traction (or NOT?)

Last year a couple of interesting studies were published regarding the use of cervical traction in patients with neck pain. Each article took a different approach. The first was an article that developed an initial clinical prediction rule to identify those subjects who would benefit from this type of intervention (Raney, et al, Eur Spine J, 2009). The second was a randomized controlled trial that looked at subjects with a specific condition as identified by a clinical prediction rule and were assigned a treatment program that did or did not include intermittent cervical traction (Young, et al, Phys Ther, 2009).

We can all agree that neck pain, especially when concurrent with neurological compromise, is a common occurrence with disabling consequences. One of the first goals in treating this type of

patient is to try and achieve some degree of symptom centralization. A common means by which to achieve this goal is manual or mechanical traction.

In the first study, Young randomized subjects into two groups with both groups getting manual therapy and exercise while only the study group subjects received intermittent mechanical traction. Interestingly, in absence of hard evidence regarding the dosage and application of traction, both studies used very similar approaches. The angle of pull was around 15-25°, the duty cycle was in the 3 to 5:1 (on/off) range, pull intensity began at about 12 lbs and increased slowly as dictated by symptom response, and with a treatment time of 15 minutes.



The "sham" traction group had a traction pull of only 5 lbs.

The results showed no significant difference between groups that had been labeled as having cervical radiculopathy based on the previously published clinical prediction rule. The good news is that both groups got better as measured by decreased pain, improved function, and reduced disability.

So what would explain the lack of additive benefit to traction?

- continued on page 2

Upcoming Courses

Advanced Manual Therapy Series
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2011 Dates

- Part 1: Manual Therapy - Mar 5-6
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- 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

Why Become a Clinical Specialist?

I listened to a great inservice last week by Dr. Larry Benz from "Evidence in Motion" on intrinsic vs. extrinsically motivated actions and behaviors. Most of us are not really professionally sparked by tangible rewards but driven by an innate desire to be the best therapist we are capable of becoming. I think striving for designation as a clinical specialist is a good example. While we all appreciate the credential that comes with successful completion of the certification process most of us are motivated to take on this task because, in the process of preparation, we became better therapists and find that are skills and knowledge are producing better patient outcomes. As Dr. Benz suggested, what we really want as therapists are autonomy, mastery, and purpose. Hopefully, the upcoming legislative season in Texas will yield us the autonomy we desire but it is up to each of us to individually find our mastery and purpose.

If you'd like to become a better therapist and interact with like-minded individuals I invite you take part in our 2011 CORE series (details at www.continuing-ed.cc). This is a 6-weekend educational activity that is designed to prepare you for the orthopedics specialty (OCS) exam but will also motivate you to stay current with the best demonstrated practice skills. Thank you to all of our participants last year. You were a testament to the self directed, creative, and passionate therapists that have made collaborative learning such a joy for me. Good luck on your OCS exam this spring!



Cervical Traction continued ...

REFERENCES

Raney NH, Petersen EJ, Smith TA, Cowan JE, Rendeiro DG, Deyle GD, Childs JD. Development of a clinical prediction rule to identify patients with neck pain likely to benefit from cervical traction and exercise. *Eur Spine J* (2009) 18:382-391.

Young S, et al. Manual therapy, exercise, and traction for patients with cervical radiculopathy: a randomized clinical trial. *Phys Ther* (2009) 89:632-642.

First, we should consider the traction treatment parameters. Longer holds, different neck angles, or sitting instead of supine could all be manipulable factors. Second, the sham treatment still applied some force to the head and neck introducing the possibility that a sub therapeutic force could have a positive effect. Third, it's possible that the outcomes used to define success may not have been ideal (but I doubt it). Finally, without a control group there is no way to know if everyone would have gotten better after 4 weeks without treatment anyway.

The study by Raney tried to identify predictor variables that would forecast the benefit of cervical traction. The strength of this study design was that it was not dependent upon a pathological label but simply tries to isolate the cluster of signs and symptoms that would most likely benefit from the application of cervical traction. The shortcoming of this research strategy is that it does not have a control, placebo, or alternate intervention group to test its hypothesis. This study did set a very high bar as the definition of success and four of the five predictor variables that fell from the regression analysis all had physiological viability and are typically associated with a poor prognosis. This combination of factors certainly would reduce the likelihood of positive outcomes being solely attributable to the natural history of the cervical disorder.

The five variables that best predicted the benefit of cervical traction were 1) age > 55; 2) Pain relief with arm resting on top of the head; 3) Reproduction of symptoms with the upper limb tension test A; 4) Symptoms that peripheralized with PAs at C4-7; and 5) Symptom relief with cervical distraction. The presence of any 3 of the variables increased the probability of success to 79% (+LR = 5) and the presence of 4 of the variables increased success to 95% (+LR = 23). The presence of only one variable decreased the probability of success (with cervical traction) to less than chance.



*Have you ever heard of a Coleman Block test?
What does it measure?*

D.E., PT



Varus foot deformity in a patient with Charcot-Marie-Tooth disease
<http://emedicine.medscape.com/article/1234042-overview>



Question of the Month: Coleman Block Test

The Coleman Block test is a familiar evaluation for podiatrists. The test is used to define the cause of cavus deformities in the foot. "Cavus" simply means an increase in the height of the medial longitudinal arch and this can be caused by deformities or impairments in the rearfoot, forefoot, or both.

Cavovarus feet can present in childhood or adulthood as either progressive or fixed deformities depending on the underlying cause and its severity. The deformities are usually caused by one of four main categories: 1) neurologic (Charcot-Marie-Tooth); 2) traumatic (deep posterior compartment syndrome, talar neck fractures, deep peroneal nerve injuries); 3) residual clubfoot; or 4) idiopathic.

With forefoot cavus, the 1st metatarsal is often more plantar-

flexed than the others due to the downward pull of a hyperactive peroneus longus. This causes a compensatory correction with the rearfoot moving into a position of inversion. In time, the inverted rearfoot can become a fixed deformity.

This is where the Coleman block test can be used to show if the rearfoot inversion is secondary to the forefoot deformity or not (i.e. is the rearfoot flexible?). In other words, this test effectively negates the impact of a rigidly plantarflexed 1st ray and the compensatory changes it would demand on the rearfoot.

To perform the test, place a 1½-4 cm (depending on degree of deformity) wooden block on the floor. Have the patient stand with their heel and lateral side of their forefoot on the block, so that the medial side of the forefoot (i.e. the 1st met head) is on the floor next to the block. View their foot from behind. If

their heel has now corrected to a more vertical (neutral) position, this means they have a mobile rearfoot and it's being forced into inversion (varus) by the plantarflexed 1st metatarsal. If the rearfoot does not correct to a neutral alignment, the inversion you have observed is not just due to the plantarflexed 1st metatarsal. You should then look for other causes such as fixed rearfoot inversion or tibialis posterior spasticity.

From a surgical perspective, if the rearfoot is rigid it usually requires correction of both the rearfoot (fusion, tendon transfers, or osteotomy) and forefoot.



Questions you would like addressed in a future issue can be sent to mulliganpt@tx.rr.com

Reference:

Khazzam M, Jordanoy MI, Cox CL, Dunn WR, Kuhn JF. Current Concepts: SARL: Shoulder Acronyms: A Review of the Literature. *Arthroscopy*. 2010 Dec 21.[Epub ahead of print].



"Oh, it's an acronym for 'It Doesn't Stand For Anything'"

**"Featured Internet Link"**

orthobullets

www.orthobullets.com

OrthoBullets is an orthopedic standardized test preparation web-site designed to prepare orthopedic residents for the Orthopedic In-Training Exam (OITE) and the American Board of Orthopedic Surgery (ABOS) written boards. While the primary purpose of the web site is to be an orthopedic review and test preparation portal, it also functions as an effective review resources for the practicing generalist orthopedic surgeon. Much of the content is not specifically relevant to the physical therapist but nonetheless interesting. After answering a multiple choice question the web site will tell you if you're correct or provide a rationale for the correct answer. There are also numerous links to more clinical content if the testing concept is foreign to your knowledge. I find it kind of a fun way to test my knowledge and identify areas in which I don't have at least a conversational background.

**SHOULDER ACRONYMS**

There is a handy current concepts article in press in *Arthroscopy* (The Journal of Arthroscopic and Related Surgery). This article lists all of the common acronyms that are used in orthopaedic discussions of the shoulder and has a brief explanation of their definition, relevance, or finding. It might be a good reference to have in your library so that you won't get lost in the alphabet jargon jungle of medicine.

**NORMAL ANATOMY ACRONYMS**

GHLs	Glenohumeral ligaments
SGHL	Superior glenohumeral ligament
MGHL	Middle glenohumeral ligament
IGHL	Inferior glenohumeral ligament
aIGHL	Anterior band of IGHL
pIGHL	Posterior band of IGHL
SSSC	Superior shoulder suspensory complex

PHYSICAL EXAM FINDING ACRONYMS

GIRD	Glenohumeral internal rotation deficit
SICK	Scapular malposition, inferior medial border prominence, coracoid pain and malposition, and dyskinesis of scapular movement

PATHOLOGICAL CONDITION ACRONYMS

PASTA	Partial articular supraspinatus tendon avulsion
PABAST	(bony PASTA) Partial articular side bony avulsion of supraspinatus tendon
PAINT	Partial articular tears with intratendinous extension
TUBS	Traumatic unidirectional Bankart treated with surgery
AMBRI	Atraumatic multidirectional bilateral treated by rehab or inferior capsular shift with rotator interval repair
ABER	Abduction with external rotation
HAGL	Humeral avulsion of inferior glenohumeral ligament
AHAGL	Anterior humeral avulsion of glenohumeral ligament
ABHAGL	Anterior bony humeral avulsion of glenohumeral ligament
Floating AIGHL	Floating Anterior inferior glenohumeral ligament
PHAGL	Posterior humeral avulsion of glenohumeral ligament (reverse HAGL)
PBHAGL	Posterior bony HAGL
Floating PIGHL	Floating Posterior inferior glenohumeral ligament
ALPSA	Anterior labroligamentous periosteal sleeve avulsion
POLPSA	Posterior labrocapsular periosteal sleeve avulsion
GLAD	Glenolabral articular disruption
SLAP	Superior labrum anterior posterior
GLEN	Ganglion cyst arising from superior labrum with entrapment of inferior branch of suprascapular nerve
GLOM	Glenoid labrum ovoid mass
PAGCL	Post arthroscopic glenohumeral chondrolysis

SURGICAL TECHNIQUE ACRONYMS

TOTS	Temporary outside traction suture
PITT	Percutaneous intra-articular transtendon technique

OUTCOME TOOL ACRONYMS

DASH	Disabilities of the Arm, Shoulder and Hand
SPADI	Shoulder Pain and Disability Index
WOSI	Western Ontario Shoulder Instability Index
WOOS	Western Ontario Osteoarthritis of the Shoulder Index
WORC	Western Ontario Rotator Cuff Index
RC-QOL	Rotator Cuff Quality of Life Measure
WUSPI	Wheelchair User's Shoulder Pain Index

What Words Mean

All clinicians are cognizant of the power of their words. A recent study in *Spine* explored the language used by patients and healthcare professionals to describe low back pain and any potential effect it had on the patient's perceived prognosis. What the researchers found was that the medical terms used to explain diagnostic tests and imaging studies do, in fact, have a profound impact on how a patient perceives their potential for healing. Focusing on repair and healing of disc problems rather than discussing ongoing damage may be a more positive approach in helping patients manage their low back pain.



Too often, when patients were told that the cause of their back pain was "*disc degeneration*" they interpreted that description as that their spine was crumbling or collapsing. Another example was the term "*wear and tear*". Patients would often incorrectly project this statement to the sense that "*everything is wearing out*". I wonder if the use of the descriptor "*normal*" or "*typical*" preceding the description of degeneration or wear and tear would have altered the patient's perceptions?

This problem is magnified further by the fact that many of the descriptors of the symptoms are pathology based and we know that imaging results are poor predictors of recovery and often show little correlation to the degree of symptoms present. The problem doesn't solely lie in how a patient interprets what they are told (or more accurately what they "hear" from what they are told). It is also the responsibility of the clinician to select verbiage that conveys an optimism for recovery and focuses on the patient's active role in achieving these goals.

Once again we're reminded of the power of diagnostic labels. I urge clinicians to focus on impairments that can be remedied through manual therapy and exercise and de-emphasize the all too-often natural changes that appear with imaging studies.

Reference: Sloan TJ, Walsh DA. Explanatory and diagnostic labels and perceived prognosis in chronic low back pain. *Spine* 2010;35:E1120-25

Previous issues are archived at
www.continuing-ed.cc/newsletter.htm



The fact that your patient gets better is not proof of the treatment's effectiveness

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Home Studies Now Available
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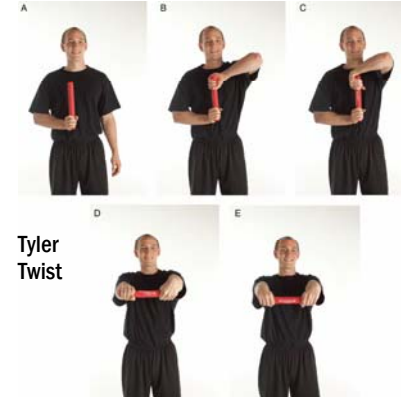
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Tennis Elbow Exercise

I've used this section of the newsletter over the years to reflect on exercises I've found effective (read personal bias). In this issue though I'm going to highlight an exercise that actually has some evidence for its effectiveness. The author designed a prospective, randomized, quasi-controlled trial of 22 subjects in which patients with tennis elbow were assigned to a standardized PT program or a PT program plus the FlexBar for eccentric exercise as picture to the right. The FlexBar is a proprietary exercise product of the Hygenic Corporation. The group using the FlexBar had significantly less pain, more strength, and better function at the conclusion of the study. The exercise is called the "Tyler Twist". The exercise is performed for 3 sets of 15 each day. Each rep should take about 4 seconds to complete with a 30 second rest between sets. Once the patient can complete all 3 sets they should progress to the colored bar with the next higher intensity. One word of precaution - watch for shoulder impingement pain on the uninvolved side in preparing the bar for exercise. For more details check out the article by Phil Page in the September 2010 issue of the *North American Journal of Sports Physical Therapy*.



Tyler Twist
 A. Hold the FlexBar in involved (right) hand in maximum wrist extension
 B. Grab other end of FlexBar with uninvolved (left) hand
 C. Twist FlexBar with noninvolved wrist while holding the involved wrist in extension
 D. Bring arms in front of body with elbows in extension while maintaining twist in FlexBar by holding with noninvolved wrist in full flexion and the involved wrist in full extension
 E. Slowly allow FlexBar® to 'untwist' by allowing the involved wrist to move into flexion (i.e., eccentric contraction of the involved wrist extensors)

Featured Home Study Program
Radiology for the Physical Therapist



A fundamental element of the physical therapy doctoral education programs is a working knowledge of radiology. Below are three radiographic images of the knee. All of the x-rays have unusual findings but two of the three are perfectly normal (albeit unusual) variants. Again, evidence we never treat an image - but treat the patient. Imaging studies should confirm or corroborate the clinical examination – not necessarily define the pathology.

On the far left is a bipartite patella. This is a common congenital fragmentation or synchondrosis of the patella occurring in about 1% of population. Most remain asymptomatic, but direct trauma may disrupt the synchondrosis and cause symptoms that mimic a fracture. The center x-ray shows a fabella in the posterior aspect of the knee. The fabella is a small sesamoid bone embedded in the lateral head of the gastroc. While it can be mistaken for a loose body or osteophyte it is a normal finding in about 20% of the population. At the far right is a Segond fracture. This fracture is a bony avulsion of the lateral tibial condyle secondary to violent internal rotation of the knee. It is pathognomonic for a torn ACL with nearly perfect specificity.



If you need a nice overview on the general principles of radiology important to a non-physician you might find our new home study titled "Radiology for the PT" to be a good resource. This study is available free of charge on our web site at 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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