continuing ED

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clinical conduit

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Upcoming Courses for 2015

Advanced Manual Therapy Series
Clinical Orthopedic Rehab Education

2015 tentative dates

Part 1: Cervicothoracic/TMD - Apr 11-12
Part 2: The Upper Quarter – May 30-31
Part 3: Lumbopelvic Spine - Jul 11-12
Part 4: Hip/Knee - Aug 15-16
Part 5: The Lower Quarter – Oct 3-4
(Leg, Ankle, and Foot)

A detailed description of the course content and learning objectives is available at our web site — www.continuing-ed.cc

Single course attendance is allowed on a space-available basis

Sleepless Nights Secondary to Shoulder Pain

A common concern of our shoulder patients is nocturnal pain causing sleepless nights. It's hard to find a position of comfort and a good night's sleep is often interrupted multiple times. I think we all agree that this is a challenging complaint and we've started a course of study to help us recognize who is particularly susceptible and ultimately what remedies may be effective in managing this disabling complaint. This sleep disturbance may be an important prognostic variable driving patients to seek treatment for many types of soft-tissue related shoulder injuries.

In conjunction with Dr. Michael Khazzam at UT Southwestern we've been collecting data from nearly 500 patients for the past year regarding their sleep quality. To no one's surprise over 90% of these shoulder patient's have some level of symptom discomfort during the night. Our first project was simply describing the phenomena and submitted our findings as a poster presentation at the upcoming American Academy of Orthopedic Surgery in Las Vegas and APTA Combined Sections Meeting in Indianapolis next year. The lead author of this poster was Dr. Meredith Brunette, a former UT Southwestern orthopedic physical therapy resident.

This pilot study was a prospective, nonrandomized single surgeon cross-sectional cohort survey with data collected prior to any intervention. Baseline outcomes data was collected including the Single Assessment Numeric Evaluation Rating (SANE), American Shoulder and Elbow Score (ASES), Pittsburgh Sleep Quality Index (PSQI), patient demographics and medical comorbidities.

We statistically analyzed our findings with Pearson correlation coefficients and multiple regression analysis to determine which patient reported factors were associated with sleep quality disturbance.

We limited our initial analysis to only those patients diagnosed with rotator cuff pathology. The initial analysis was based on 147 shoulders in 131 subjects. There were an equal number of men and women (66 male and 65 female) with involvement on the right side 66 times, left side 49 times, and 16 with bilateral involvement. The mean age of the study population was 56.4. 92 of the subjects were diagnosed as "rotator cuff tendinosis" and 34 subjects were suffering from full thickness rotator cuff tears which were confirmed by MRI.

The mean SANE was 48, VAS 4.85, ASES 52, PSQI 8.26±5.0, and 92% of subjects reported nocturnal shoulder pain. Pearson correlation coefficients determined that female sex (males-0.23, p=0.001),

- continued on page 2

Risk for Re-tear after ACL Surgery

A well-designed study with alarming conclusions was published earlier this year in the *Am J Sports Med* by a research friend from the Children's Hospital in Cincinnati. The study evaluated the risk of a second tear of the ACL (in either knee) after a primary reconstruction. We know from previous research that the prevalence of a second tear is somewhere in the neighborhood of 10%. One study showed that 6% (1 in 17) of reconstructed knees sustain another ACL injury within two years and another study found a 12% chance (1 in 8) over a 5-year period. The problem with these studies is that they discount the impact of self-select discontinuation of the index activity that originally caused the injury. Many who tear their ACL will decide that continued participation in high-risk activities is unnecessary or unwise. This study evaluated the true re-tear incidence rate by measuring adverse events (ACL tears) in only those that returned to their index activity for a minimum of 50 hours/year. The author's hypothesis was that the incidence of re-tear would be higher in the previously reconstructed group over a 2-year period of time and that the risk of re-injury would decline (although still be higher than an uninjured cohort) during the second year after return to sport.

- *continued on page 3*

Shoulder Sleep continued ...

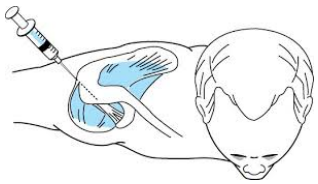
higher pain VAS score (+0.26, p=0.003)), depression (+0.39, p<0.0001), presence of low back pain (+0.36, p<0.0001) smoking (+0.22, p=0.01), diabetes (+0.19, p=0.03), presence of osteoarthritis (+0.19, p=0.03), and NSAID use (+0.17, p=0.05) were associated with poor sleep quality. Factors not associated with sleep quality included age, ASES score, presence of full thickness rotator cuff tear, presence of biceps pain, BMI, shoulder range of motion impairments, or the presence of concurrent cervical spine diagnoses.

Based on our findings pain we concluded that female sex, depression, presence of low back pain, smoking, diabetes mellitus, and prior NSAID use were are all factors associated with worse sleep quality in patients with rotator cuff disease. Additionally we found that the sleep quality did not seem to correlate with the severity of rotator cuff pathology.

In a separate study that I'm currently working on were expanding our perspective and seeing how patients with osteoarthritis and adhesive capsulitis compare to the rotator cuff subjects. Our preliminary findings show that adhesive capsulitis patients report the highest nocturnal pain and sleep interruption levels. This study population consisted of 92 females and 86 males with an average age of 57.4 years. 92% reported the presence of nocturnal pain. There was a significant difference in age for the osteoarthritis group as compared to the rotator cuff and adhesive capsulitis groups but no other demographic differences in regards to sex, side of involvement, or body mass index. The mean SANE score was 48% for the rotator cuff group, 44% for the osteoarthritis group, and 34% for the adhesive capsulitis group which was a significantly lower self-rating than the rotator cuff group (p = 0.04). The mean ASES score for the involved side was 52 for the rotator cuff group, 44 for the osteoarthritis group, and 38 for the adhesive capsulitis group which was significantly lower than the rotator cuff group (p = 0.04).

Mean pain scores on a visual analog scale were 4.85, 4.82, and 5.74 on a 0 to 10-point scale for rotator cuff, osteoarthritis, and adhesive capsulitis respectively. There was no significant difference in pain levels or time necessary to fall asleep between groups. The overall mean PSQI scores was 8.26 + 5.0 for rotator cuff pathology, 9.27 + 2.1 for osteoarthritis, and up to 11.8 + 5.5 for adhesive capsulitis. Sleep quality, as represented by the PSQI, was significantly compromised in the adhesive capsulitis group (p = 0.01) as compared to the rotator cuff group with no other group differences present between diagnostic categories. In particular, subcomponents of the PSQI that had a significant impact on sleep interruption included sleep quality, sleep duration, and use of sleep meds (p = 0.005, p = 0.01, p = 0.02, respectively). No significant differences were found between groups in regards to sleep latency, efficiency, disturbance, or daytime dysfunction as contributors to the PSQI (p > 0.05). We should have a lot more information in the next year or two as we continue this study. Most importantly, we hope to move towards studying remedies once we have a better idea of the prevalence. Stay tuned.

Do you recommend subacromial corticosteroid injections for your patients?



Ettinger L, Shapiro M, Karduan A. Subacromial injection results in further scapular dyskinesis. *Ortho J Sports Med*. 2014 vol. 2, 8: 2325967114544104

We'll let's start with that it is outside my scope of practice and expertise to recommend a prescription medication. That said, I do have an opinion on who might benefit and what limitations may be present. I think it is always better to avoid the injection if possible. I prefer the patient who is sent to physical therapy for us to manage their pain and address their impairments first. If negligible progress is seen during the first few visits (secondary to pain limitation) I'm quick to contact the referral source to suggest evaluation for a potential injection. Often, this pain relief will allow the therapeutic intervention to proceed without as much pain or discomfort for the patient. However, it is important that the patient understand that this pain relief is likely temporary and only a "Band-Aid" to their overall care. It is the correction of their impairments (through manual therapies and therapeutic exercise) and education on activity modifications that are likely to offer a more permanent solution.

A recent controlled laboratory study even suggests that a subacromial injection may result in further scapular dyskinesis – even more ammunition to convince a patient of the value of our therapeutic services. In this study by Ettinger et al, the authors found that the use of an anesthetic, which is common with these injections, caused an increase in anterior tilt of the scapula during elevation – exactly what the patient does not need.

I'm also part of an interesting randomized controlled trial in which we'll be comparing the benefit of Kenalog and Ketorolac (Toradol) in regards to symptom relief, patient satisfaction, and change in function. Based on the aforementioned study maybe we should look at some common musculoskeletal impairments as well. The study is currently under FDA review secondary to the "off-label" use of the Torodal but it should be interesting to see how effective this medicine is compared to the more traditional anti-inflammatory medicines.

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

ACL Re-tear continued -

To test their hypothesis the researchers took 78 subjects who returned to sport (with MD/PT approval) after an ACL reconstruction and compared their injury rate to an age, sex, sport, and activity-level matched group over a 2-year time frame. The results were quite interesting. **The risk of tearing the ACL was 30%** (23/78) in the previous knee surgery group and only 8% (4/47) in the uninjured group. In the group that re-tore their ACL there were about twice as many injuries in the "other" (contralateral) knee and there was no relationship with how long it took to return to sport and the risk of re-injury. Also of interest is that all graft types (allografts, hamstring autograft, patellar autograft) were about equally prone to the re-tear.

As hypothesized, the re-tear rate began to decline in the second year. The risk in females was about 15 times higher than the previously uninjured group in the first year and had declined to about 6 times higher in the second year. The overall risk was brought down by a seemingly lower re-tear risk for males although this was difficult to ascertain because of the relatively small number of males in the study and the absence of re-tears in the healthy control group to serve as a risk comparison.

So what does this all mean? For one, it appears that the risk is much higher for subsequent ACL tears after a first surgical reconstruction than previously believed—maybe as high as 30% and second, this study would suggest we are either letting athletes return to high-risk activities to early or we do not do an adequate job in preparing the knee for the rigors of competitive pivot and decelerating activities in the final 6 months of rehab.

My suspicion is more the latter. The athletes who returned earlier did not suffer a higher percentage of injuries. I think it is more likely that either the athlete was at a greater non-modifiable risk (structural or physiological) and thus, predisposed to the injury or we just don't get enough rehabilitation time (insurance limitations) in the terminal phases of return-to-sport activity. Maybe we need to work closer with our athletic trainer colleagues who do see the athlete during this phase of rehabilitation to better coordinate the functional progressions necessary to ensure safe and effective return to their index activity.

This is an example of extremely well done research that should prompt the medical community to closely scrutinize our current approach to patient management following an initial ACL injury.

Reference

Paterno MV, Rauh MJ, Schmitt LC, Ford KR, Hewett TE. Incidence of Second ACL Injuries 2 Years After Primary ACL Reconstruction and Return to Sport. *Am J Sports Med*. 2014 Apr 21;42(7):1567-1573.

"Featured Internet Link"

http://communities.apta.org/p/co/in/faid=2

The APTA has just released their updated "communities" page which allows all members to access a variety of information. The link is located along the top ribbon on the APTA home page. The community links are customized to your level of APTA involvement and include information and content regarding branding, fall prevention, house of delegates, joint commission, and Medicare quality reporting to name a few. For those involved in sections, task forces, or work groups there are private links to access information and communicate with your fellow committee members. It is also a valuable resource to participate in discussions and share ideas, information, and resources for section activities in which you may be involved. Check it out.

The 10% Rule put to the Test

A well-known and widely accepted rule of training progression used by therapists, coaches, and athletes is to not increase the duration of a conditioning activity by more than 10% per week. The intent of the rule is to reduce overuse injuries. This may be particularly important to athletes who are returning from a musculoskeletal or soft-tissue related injury. This assumption was recently put to the test in an article that was published in the recent theme issue on running related injuries in the October issue of the *J Orthop Sports Phys Ther.*

Nearly 900 runners were provided with a GPS system to track their running sessions over a one-year period of time. The subjects were then classified into one of three groups. 1) Regression or < 10% increase in mileage; 2) 10-30% increase in mileage; or 3) > 30% increase in distance during the year. The demographics of the runners was rather typical in regards to BMI, running experience, and there were roughly and equal number of men and women. The three groups were then evaluated for their running-related injury incidence. "Injuries" were defined as any condition that restricted the amount of running for at least one week.

Injury risk was expressed as hazard ratios via a Cox regression model. 46% of the runners were categorized as minimal in their progression, 21% were categorized as moderate (10-30%) increases, and the remaining categorized as large increases. The study results showed that the runners who progressed their weekly running distance by greater than 30% were more vulnerable to typical distance-related injuries such as patellofemoral pain, ITB friction syndrome, medial tibial stress syndrome, patellar tendinopathy, and greater trochanteric pain syndromes. This category had a risk ratio of 1.59 as compared to the index group of less than 10% increase. The 10-30% increase group's risk was essentially unchanged at 1.03.

While this exploratory study needs further validation it appears that our 10% rule may be a little conservative. It also appears that only about 1/3 of the injuries could be directly attributable to the excessive progression strategy. I've always found the 10% rule to be less than practical even for the most patient of training athletes. Using a 2 mile distance as the base it would take well over a month before progressing to a 3-mile run. In my experience that is too slow a progression for most (even novice) runners. This study may lend preliminary evidence to suggest that we could allow a runner to progress a little more aggressively without increasing their risk for injury.

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

"What can be asserted without evidence can also be dismissed without evidence."

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The "Clinical Conduit" newsletter is an every other month publication available to any allied health care provider free of charge upon request. Individuals who would like to be included on the email distribution list should contact the editor at mulliganpt@tx.rr.com

Clinical Orthopedic Residency Education Series: An Advanced Manual Therapy Education Track

These courses are designed to provide a comprehensive overview of orthopedic physical therapy (from head to toe) based on the APTA's definition of advanced specialty practice. We've had a number of clinicians from the community take the series over the past 5 years and received excellent feedback on the content and format. In fact, we've had over 30 clinicians from our first four classes pass the orthopedic specialty (OCS) exam. We anticipate another 10-12 from the 2014 class to be sitting for the exam in March. If you'd like a mechanism by which to prepare for the exam or would simply benefit from advanced coursework with expert colleagues, we hope you'll consider joining us this year. These courses are taught by the orthopedic faculty at UT Southwestern. The 2015 series will begin again in April. The course content includes examination and intervention strategies for the cervicothoracic spine, upper quadrant (shoulder, elbow, hand), lumbopelvic spine, and lower quarter (hip, knee, ankle/foot). All of the material is based on current evidence with over 50% of the on-site course work devoted to lab demonstration and practice. For more information on the 2015 advanced clinical orthopedic education series please visit our web site at **www.continuing-ed.cc/residencycourse.htm**. Let us know if you'd like us to send you a brochure. The courses are designed as a series but attendance at singular courses is allowed on a space available basis.

The Quality of Health Care Internet Information

How many times in the past month has a patient challenged your educational efforts with quotes from "Dr. Google"? I think it's great that patients have the internet to learn more about their disease or injury but we know that not all internet sites are created equal. I'm aware of a couple of studies that have looked at the quality of health information in conditions familiar to orthopedic physical therapists. Back in 2004, Moshirfar et al, evaluated the quality of internet-derived information on plantar fasciitis. They looked at over 150 internet sites and analyzed them for authorship, sponsoring agency, and presence of financial incentive. They scored the informational value of each site using a 10-point scale based on the following parameters: basic definition of plantar fasciitis, causes and risk factors, clinical symptoms, diagnostic tests, differential diagnosis, conservative and surgical treatment options, and complications. The overall mean information value score for all 152 sites was 3.8 points and 36% of the sites showed financial bias. The highest mean scores among all authorship and sponsorship categories belonged to ortho surgeons and academic institutions with mean scores of 7.1 and 6.1 points, respectively. Sites without obvious financial bias had significantly higher information value scores than sites with financial interests.

In a more recent study, Lee et al, evaluated web sites on femoracetabular impingement for their quality. These sites were classified as excellent, high, moderate, poor, or inadequate based on authorship type, by HONcode certification, and by quality level. In the 100 sites they evaluated, 73 offered the ability to contact the author, 91 offered a considerable explanation of FAI, 54 provided surgical treatment options, 58 offered nonsurgical treatment options, 27 discussed possible complications, 11 discussed eligibility criteria, 31 discussed rehabilitation, 67 discussed a differential diagnosis, and 48 included peer-reviewed citations. 40 web sites were categorized as academic, 33 as private, 9 as industry, 9 as public education, and 9 as blogs. The authors classified 16 Web sites as excellent, 18 as high, 17 as moderate, 18 as poor, and 31 as inadequate. Only 8% of all evaluated Web sites contained HONcode certification.

Both studies speak to the dramatic variability in quality of information our patients can access. It may be prudent to develop your own list of web sites for patients to access that you believe contain accurate information that parallels your perspective and evidence-based content.

As you may know our continuing education company supplies information on conditions common to orthopedic and sports physical therapy. While not intended for a lay audience we do think the content is accurate and based on best current evidence. If you'd like more information on our home studies they can be found at http://www.continuing-ed.cc/homestudy.htm. These are all TPTA approved and can be accessed free of charge. A post-test for CEU credit for a reasonable fee is also available.

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Radiology for the PT	.3 CEUs
Goniometry 101	.2 CEUs
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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
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Ethics and Professional Responsibility	.2 CEUs

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