HANDS-ON

Editor Jim Meadows

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March 2005

This Issue; Jennis Elbow

Editorial: Chiropractic Statement on Manipulation in Nevada

This was emailed from the American Physical Therapy Association.

The chiropractors in Nevada have filed BDR 699 which would expand the definition of 'chiropractic adjustment' to encompass manipulation and Grade 5 mobilization. It would also prohibit anyone from performing a chiropractic adjustment, manipulation and/or Grade five mobilization without first having the legal authority to differentially diagnose and have received a minimum of four hundred (400) hours of classroom instruction in adjustment, manipulation and/or Grade V mobilization and a minimum of eight hundred (800) hours of supervised clinical training at a facility where chiropractic adjustment, manipulation and/or Grade V mobilization is a primary method of treatment.

"Chiropractic adjustment, manipulation and Grade V (five) mobilization" defined. Chiropractic adjustment, manipulation and Grade V mobilization, individually and collectively are defined as a "chiropractic adjustment", each meaning the application of a precisely controlled force applied by hand or mechanical device to a specific

(Continued on page 2)

Upcoming Courses

April 1-3	Level 3 Upper Quadrant (A)	Virginia
Aoril 8-10	Peripheral Manipulation	California
April 22-24	Level 3 Upper Quadrant (B)	Virginia
May 13-16	Spinal Manipulation	New York
May 10-22	Whiplash	Montana

Inside this issue:

January's Who Said it?

#1 A fanatic is one who can't change his mind and won't change the subject.

Winston Churchill

#2 There are 10^11 stars in the galaxy. That used to be a huge number. But it's only a hundred billion. It's less than the national deficit! We used to call them astronomical numbers. Now we should call them economical numbers.

Richard Fineman
Physicist and Nobel Prize winner.

March's Who Said it?

Facts are stubborn things, but statistics are more pliable.

Editorial Continued

focal point of the anatomy for the sole purpose of creating a specific angular movement in skeletal articulations to eliminate or decrease interference with neural transmission, to mobilize a joint or bony articulation and correct or attempt to correct a subluxation complex.
a) No person licensed under Nevada Code may perform a chiropractic adjustment, manipulation and/or Grade five mobilization as defined above without first having the legal authority to differentially diagnose and have received a minimum of four hundred (400) hours of classroom instruction in adjustment, manipulation and/or Grade V mobilization and a minimum of eight hundred (800) hours of supervised clinical training at a facility where chiropractic adjustment, manipulation and/or Grade V mobilization is a primary method of treatment.

American Physical Therapy Association - 1111 N. Fairfax Street, Alexandria, VA, 22314. 800-999-APTA (2782).

This would effectively exclude any other profession from practicing spinal or peripheral manipulation in the state of Nevada. Although there are semantic arguments to be made for the continuing use of linear manipulations by other professions this is arguing details not principle. It must be the principle that is addressed and from what I can see there are only a couple of ways of honestly doing so. If we allow that the chiropractors in Nevada are acting in the best interests of the general public and not simply turf protecting, then we have to deal with the claim that the application of spinal manipulation requires training to the extent that this would-be bill sets out. We should do so not from the perspective of protecting our rights in this but in seriously assessing these requirements from the perspective of safety and effectiveness and then deciding if our basic training takes us to this level. I do not think we as a profession, either in Canada or in the USA, has done

(Continued on page 3)

Letters and Comments

Am I not being provocative enough for you or do you all agree with me.

this. Making bald statements that it is part of our scope of practice does not do so, we might just as well say that we are qualified to carry out brain surgery with as much evidence.

A serious effort, not defensive statements, needs to be made, by all professions claiming manipulation as part of their scope of practice to determine how effective and safe manipulation is, what techniques work best, what requirements are necessary in training and what changes, if any need to be made to such training. It is possible that the chiropractors are over-trained in some areas that we and the physicians are under-trained and some in which we are better trained. Or it may be that manipulation is not as an effective treatment as we believe and that safety considerations overwhelm any benefit. We will never know until a broad-based, rational and comprehensive study is undertaken. At the moment it is one profession taking pot-shots at another, one often irrational opinion against another, and a lot of weak studies really producing nothing except conclusions that further study needs to be done. Now is the time to do the further study and it should be carried out in a coordinated fashion by all concerned.

Swodeam Courses 2005

2005

	Course	Location
Jan 7-9	Level 3 Lower	St. Louis, MO
Jan 14-16	Chronic MVA	Fairfax, VA
Jan 22-24	Acute MVA	Helena, MT
Jan 28-30	Level 3 Lower	St. Louis MO
Feb 4-6	Spinal Manipulation (1)	Dallas, TX
Feb 11-13	Upper Limb	Baltimore, MD
Feb 18-20	Spinal Manipulation (2)	Dallas, TX
Feb 25-27	Level 3 Lower (1)	Madison, WI
Mar 10-15	Level 3 ?	Colorado Springs, CO
Mar18-20	Level 3 Lower (2)	Milwaukee, WI
Apr 1-3	Level 3 Upper (1)	Fairfax, VA
Apr 22-24	Level 3 Upper (2)	Fairfax, VA
Apr 29-May 1	Spinal Manipulation (3)	Dallas, TX
May 6-9	Manual Therapy Symposium	Quebec City, PQ
May 13-15	Spinal Manipulation (1)	Syracuse, NY
May 20-22	Peripheral Manipulation	Freemont, CA
June 10-12	Chronic MVA	Boston, MA
June 14-20	NAIOMT Conference	Washington, DC
July 15-17	Level 2 Upper (1)	St. Louis, MO
July 22-24	Spinal Manipulation (1)	Calgary, AB
July 29-31	Spinal Manipulation (2)	Calgary, AB
Aug 5-7	Level 2 Upper (2)	St. Louis, MO
Aug 12-19	Spinal Manipulation (1)	Calgary, AB
Aug 19-21	Spinal Manipulation (2)	Calgary, AB
Aug 26-28	Acute MVA	Tulsa, OK
Sep 9-12	Differential Diagnosis	Portland, OR
Sep 16-18	Spinal Manipulation (3)	Calgary, AB
Sep 23-25	Differential Diagnosis (1)	Dallas, TX
Oct 2-4	Chronic MVA	Berrien Springs, MI
Oct 7-9	Chronic MVA	Detroit, MI
Oct 10-13	Clinical	Detroit, MI
Oct 21-23	Differential Diagnosis (2)	Dallas, TX
Nov 4-6	Level 3 Lower (1)	Fairfax, VA
Nov 11-13	Spinal Manipulation (1)	Edmonton, AB
Nov 19-20	Spinal Manipulation (2)	Edmonton, AB
Dec 2-4	Level 3 Lower (2)	Fairfax, VA
Dec 0-11	Lumbopelvic	Baltimore, MD

All courses unless specifically stated are combinations of lecture and lab, usually about 50/50. Each course is organized by a local coordinator and for contact to that person please email Jim Meadows at jim@swodeam.com

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For further information on courses contact jim@swodeam.com

Diagnosis, Etiology and Triggers Part 2: Tennis Elbow

Tennis Elbow. Trigger vs Etiology vs Diagnosis

Tennis elbow or the alternative and almost certainly completely erroneous term lateral epicondylitis (epicondylitis means inflammation of the epicondyles itself and although the term is used very commonly it is doubtful that many of its users actually mean bone inflammation) is most usually thought of as a tendonopathy although other pathologies have been suggested.

Tendonopathies come in two flavors, tendonitis. Tendonitis (inflammation of the tendon) is characterized by the attributes of inflammation, that is a sudden onset, moderate to severe pain, moderate to high irritability. Tendonosis which is more of a degenerative condition of the tendon, resulting from minor injury and failure to repair adequately, is recognized by a generally slow onset, mild to moderate pain and minimal irritability. The distinction is important because obviously the two conditions require completely different treatments. For the purposes of the discussion today the main use of the distinction will be in the role of considering whether or not remote or local etiologies need to be sought. Where tendonitis is diagnosed, the cause is usually obvious, it is the proximate event. But in the case of tendonosis the proximate event is usually the trigger not the cause and the etiology must be established if long term relief is to be expected.

Primary tennis elbow, that is the tendonopathy that is inflamed and caused by an obvious injury or unfamiliar over-use probably is not all that common. It is unusual to come across patients who have a discrete history of a lateral elbow injury or unfamiliar overuse and an obviously inflamed tendon. More commonly, the overuse, if it is present, is minor or is not unfamiliar and the condition is characterized by non-inflamed behaviors. If the condition is one of tendonosis rather than tendonitis and an external unfamiliar cause cannot be demonstrated from the history then internal changes must be addressed in the examination. In cases of secondary tennis elbow it is worthwhile mentally categorizing the information into forms that will allow the therapist to consider the diagnosis, trigger, external and internal etiologies.

The first job is to make the diagnosis. The current trend is to forego making an anatomo-pathological diagnosis and substitute one based on a cluster of signs and symptoms, that is use a syndrome rather than a diagnosis. The problem with this operational definition approach is that it tends to dumb down the profession and more importantly makes it difficult to switch gears when the signs and symptoms do not fit nicely into a neat little pigeonhole. One operational definition of tennis elbow is that there is pain at the lateral elbow, which is exacerbated by isometric wrist extension and radial deviation with tenderness over the common extensor tendon. This illustrates one weakness of this type of approach. First is this a tendonitis or a tendonosis (remember that pathology is not, strictly speaking, part of this diagnosis) and as has already been discussed this distinction is important. Secondly, there are biomechanical conditions such as radiohumeral or superior radio-ulnar joint dysfunction, neurophysiological conditions such as segmental facilitation and medical conditions such as intra-articular radial head fractures that can be included in this operational diagnosis. Each of course requiring radically different treatments. Nobody needs help to be stupid we can do that all on our own so this discussion will work from the anatomo-pathological diagnosis, which a painful degenerative region in the common extension tendon (tendonosis) or an inflamed region in the common extensor tendon (tendonitis).

Differential Diagnosis of Lateral Elbow Pain of Local Pathology

Fracture of the radial head will be recognized when the onset of severe pain follows within a very short space of time either a direct insult to the lateral elbow or a fall onto the outstretched hand, usually from a height or while running. Pronation and supination is very limited and flexion and extension less so but generally still obviously so. The radial head is tender and compression through the radius (assuming you still feel the need to do this) is painful.

Radiohumeral/ radioulnar joint dysfunction can look very similar to tennis elbow but with extremely carefully palpation along the tendon this diagnosis can be excluded. Definitively, the dysfunction will become apparent on biomechanical examination of the affected joint.

Segmental facilitation, strictly speaking is not a local pathology but it can be extremely confusing and so is included here. The patient suffers from acute or protracted pain somewhere in the neck or upper limb in a tissue sensorily innervated by C5 or C6 segments. This results in lowering of the response threshold of the segment which causes normal muscle contractions to be painful and the tendon to be tender, just like tennis elbow. Differentiation can usually be made by rechecking the contractile test with the head and neck in various positions of flexion, extension rotation and combinations thereof. If the pain is completely eliminated in any

(Continued on page 6)

position it can be argued that there is no local pathology, at least not from a symptomatic point perpective. If, as is more usual, the pain subsides significantly in any position then it can be stated that the cervical spine is influential in the condition.

Tendonitis is characterized by lateral elbow pain of high pain levels, high irritability and cause that is both obvious and unfamiliar immediately preceding the high level of pain. Often the isometric contraction test will demonstrate painful inhibition and there may be limitation of elbow extension by pain. Tenderness is extreme.

Tendonosis is diagnosed by lateral elbow pain of moderate levels with low irritability and a non-obvious cause or a history of familiar "over-use". The isometric contraction is painful but not weak and the tenderness is relatively low as compared to that of tendonitis.

Trigger and Cause

A trigger is something that causes signs and symptoms but is not the cause of the condition, this pre-dates the trigger. If you are convinced that the proximate event was the cause rather than simply a trigger then often eliminating the cause together with resting the inflamed tissue results in rapid resolution of the condition. Eliminating the trigger does not eliminate the pathology and it is more than possible a different but similar trigger might "trigger" the whole thing again. This is one way to go but a more definitive solution is to seek out the predisposing factors (etiologies) and deal with them either after or concurrent with dealing with the trigger and the pathology.

Etiologies

External etiologies include such things as changing equipment such as a new and larger racquet, hammer, drill or suchlike. Change in working conditions such as working overhead instead of at waist level or having to lift differently due to more constricted working conditions. Generally these are fairly simple to pick up providing the patient is permitted freedom to express these changes. This means allowing him/her a feeling of equal partnership in the subjective examination process. Sometimes questions have to be very directed and specific rather than open-ended as is most commonly advised.

When careful questions fails to reveal external changes that could be responsible for the onset of symptoms predispositions internal to the patient have to be considered. Common remote causal or contributive sites include the cervical spine, the elbow itself and the wrist. Neurophysiological, neurological or mechanical links exist between these sites and can be associated with the pathology.

C5/6 dysfunction producing compression of the spinal nerve or root can lead to reduction in axoplasmic flow with consequent trophic malnutrition and weakening of the collagen in the tendon or muscle. Compression may result in a frank motor palsy that results in weakness and increased vulnerability of the muscle to normal stress. Additionally, such compression may reduce neuromuscular co-ordination to the point where damage occurs with repeated contractions. Segmental facilitation, most usually from cervical pain but sometimes from other areas, may cause neuromuscular incoordination with resulting weakness causing damage.

Abduction subluxation of the ulnohumeral joint results in the hand drifting into ulna deviation with subsequent loss of extension and radial deviation. The theory goes that the abnormal proprioception from the wrist due to the hypomobility leads to excessively forceful contractions of the radial extensors as they try to achieve full range wrist extension/radial deviation are consequently overused.

Wrist hypomobility directly results in the same attempt at achieving full range wrist extension. This particular speculation has recently gained some support in the form of a controlled trial where the wrist was treated by repeated manipulation which resulted in improvement in the elbow pain.

Tennis elbow of cervical origin may be checked by re-testing isometric wrist extension with the head in different positions. If the elbow pain is completely eliminated during this testing, there is no pathology at the elbow and no local treatment is required. However, as is more usual, the pain is reduced indicating that there is a contribution from the neck but there is also local pathology that requires treatment.

Testing the elbow quadrant will demonstrate the possibility of an abducted ulna and more detailed biomechanical examination will confirm it.

Fanning and folding of the wrist will screen for wrist dysfunctions and again a detailed biomechanical examination will demonstrate the hypomobility into extension.

(Continued on page 7)

Treatment

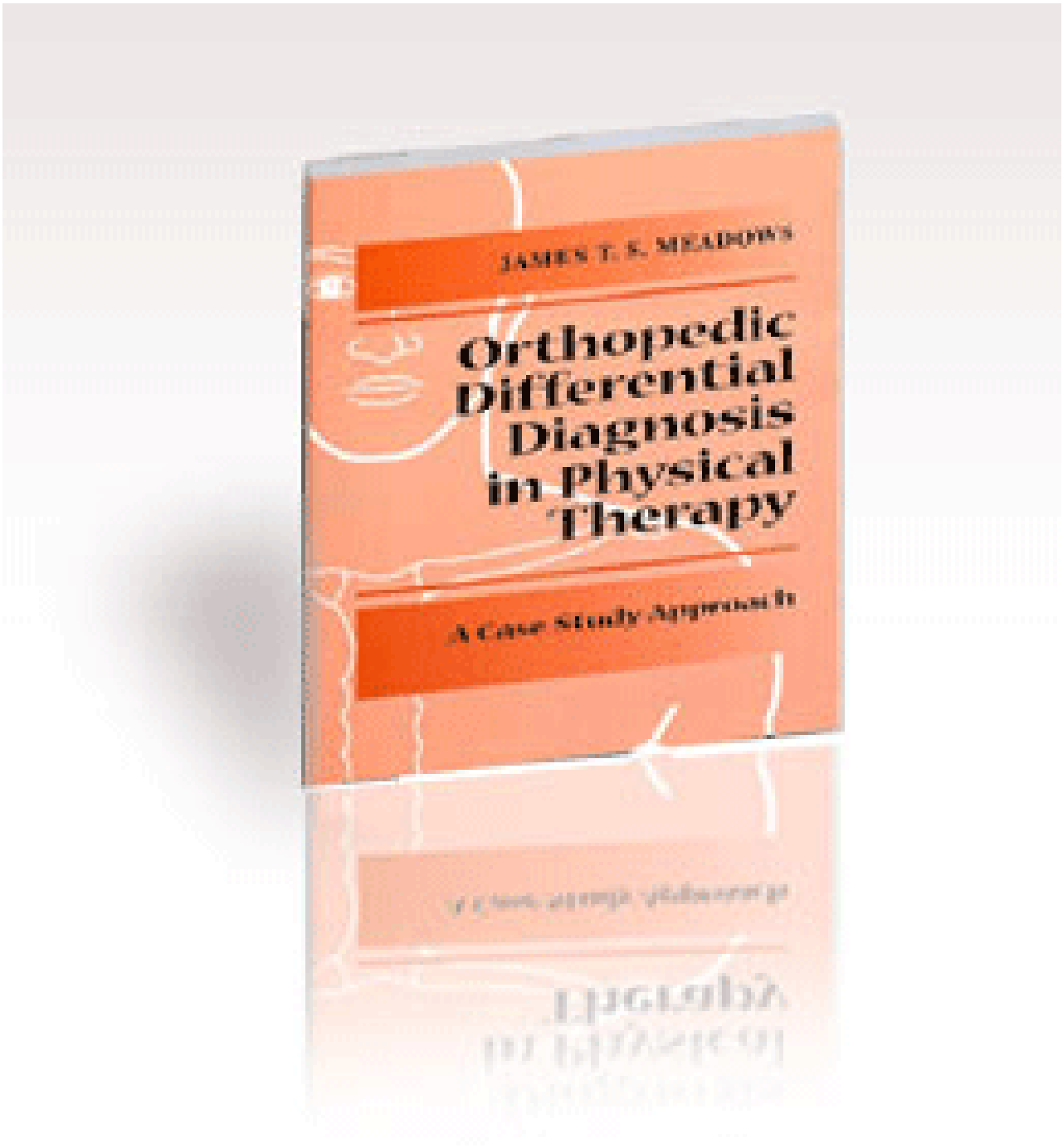
Treatment of the local pathology may include deep transverse frictions, manipulation, stretching, electrical muscle stimulation and eccentric exercises. In addition, if there is an abducted ulna, this must be manipulated so that the normal motion is restored to the elbow and wrist.

Remote treatment includes mobilization or manipulation of the neck or the wrist together with the other usual rehabilitation procedures for these areas. Recently an article was published ("Manipulation of the wrist for management of lateral epicondylitis: a randomized pilot study", by Struijs, Damen, and Bakker, et al. Physical Therapy 2003;83(7):608-616,) in which the subject group patients with an operational diagnosis of tennis elbow were treated by wrist manipulation and found to be better served than when treated with more traditional methods.

Summary

Tendonosis is most probably the result of repeated stress to the tendon with failure to repair optimally, while tendonitis is a one off injury or serious overuse. In the latter there is usually no need to go looking for etiologies other than the obvious external trauma. In those patients suffering tendonosis a more detailed subjective history must be undertaken. If no evidence is found of environmental changes then the entire upper quarter from the cervical spine through the thoracic and into the arm must be carried out. Any dysfunctions found must then be rationally assessed for their potential to cause the tennis elbow either directly or acting in concert with another predisposition. For example an abduction subluxation of the Humerus by itself may not be sufficient to cause a tennis elbow but when combined with a wrist extension hypomobility or a C5/6 stenosis, wbich may in turn be aggravated by a high thoracic biomechanical dysfunction,

When assessing not just a tennis elbow but almost any condition where there is insufficient explanation for the cause of the patient's signs and symptoms go looking for the real causes. These may well be silent and hidden but given sufficient perseverance and a rational interpretation of the clinical findings they should come to light.



Orthopedic Differential Diagnosis in Physical Therapy by Jim Meadows deals with the analysis of the subjective and objective examinations primarily based on the concepts of James Cyriax. The book is in three parts, the first discusses general principles in diagnosis, the second with specific issues in each spinal region and the third offers interactive case histories that use the principles detailed in the earlier sections of the book. The book is intended for all levels of physical therapist including the pre-professional student.

Prices vary but average out at about $40 US and the book may be purchased through Amazon.com or ordered through a local medical book store. Swodeam Consulting does not sell the book by arrangement with the publishers Magraw-Hill.

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Manual Therapy Videos Now Available in DVD.

The video series manual therapy is now available on DVD. The VHS tapes have been converted to into 10 DVDs each with an interactive menu. The 10 discs cover differential diagnosis, selective tissue tension testing basic and advanced biomechanical examination and diagnosis, biomechanical treatment and the assessment and treatment of the post-MVA patient. All areas of the body including the spine, peripheral joints, TMJ, SIJ and ribs are covered.

The video was made and produced at KWGN-TV in Denver, CO and as such is of professional quality and includes picture-in-picture of picky or complex techniques.

The full retail cost of the set is $700 but for a limited time subscribers to Hands-On and previous students of Jim Meadows and to past purchasers of the tapes can buy the set at 50% discount, a cost of $350 including mailing and handling (Canadian Dollars at par with US Dollars). To order send a cheque made payable to James Meadows to:
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For further information go to my web site at www.swodeam.com or contact Jim Meadows at jmeadowspt@aol.com or by phone at 586 596 7424.

January's Quizzes for Fun Answers

A. Biomechanics

1. Define the word saddle or sellar joint.

A joint surface that is concavoconvex in its primary contours

2. What is the difference between a modified and unmodified sellar joint

An unmodified sellar surface has the convexity perpendicular to the concavity and as a consequence it has two degrees of freedom, where the modified surface has the convexity and concavity not perpendicular and only one degree of freedom.

3. Define the word ovoid joint

A surface that is entirely convex or concave.

4. What is the difference between a modified and unmodified ovoid surface

The unmodified surface is curved equally in all directions like a basket ball and has three degrees of freedom whereas the modified surface is unequally curved and has only two degrees of freedom.

5. How many degrees of freedom does each surface normally afford

Unmodified ovoid 3, modified ovoid 2, unmodified sellar, 2 and modified sellar, 1

B. Pathology. You believe a patient with chest pain may have shingles answer the following questions on the disease. For an excellent discourse on this condition go to Emedicine http://www.emedicine.com/derm/topic180.htm

1. What is its pathology

It is the virus varicella affecting most commonly the posterior spinal ganglion and less commonly the anterior and posterior horns of the spinal column

2. What is its etiology.

Exposure to the varicellar-zoter virus after already having suffered chicken pox in the past

3. What is the age group that most commonly contracts the condition

About 10-20% of the US population develops the disease but it is much higher in the elderly or in those suffering immunosuppressed diseases

4. When can you expect the vesicles to erupt

Average is 48 hours but it can be simultaneous with the pain onset or up to 10 days later.

5. What is its treatment

Oral steroids such as prednisone to reduce the inflammation of the ganglia and so reduce pain, antiviral drugs including acyclovir. Post-herpes neuralgia is difficult to treat and medications used to treat the pain include antidepressants, gabapentine, an anti convulsant drug, and topical capsaicin,

C, Research

1. Define the term face validity

The determination of whether or not a particular measuring instrument is appropriate for the task by simple inspection.

3. What are the pros and cons of face validity

In general opinion regarding face validity among researchers is that it has little value. The main con seems to be that it is who is actually doing the inspection that is the variable and so this type of validity is very subjective. If it is a novice in the field who has little knowledge of the field's content then face validity is of little value. But why would a novice be used for this task. The pro is that if the instrument does not seem to be the one to use by simple inspection then the results of research will likely be of little value to the end user. For me and most clinicians this type of validity is of great importance, because it determines how much faith I, as the consumer, put in the research.

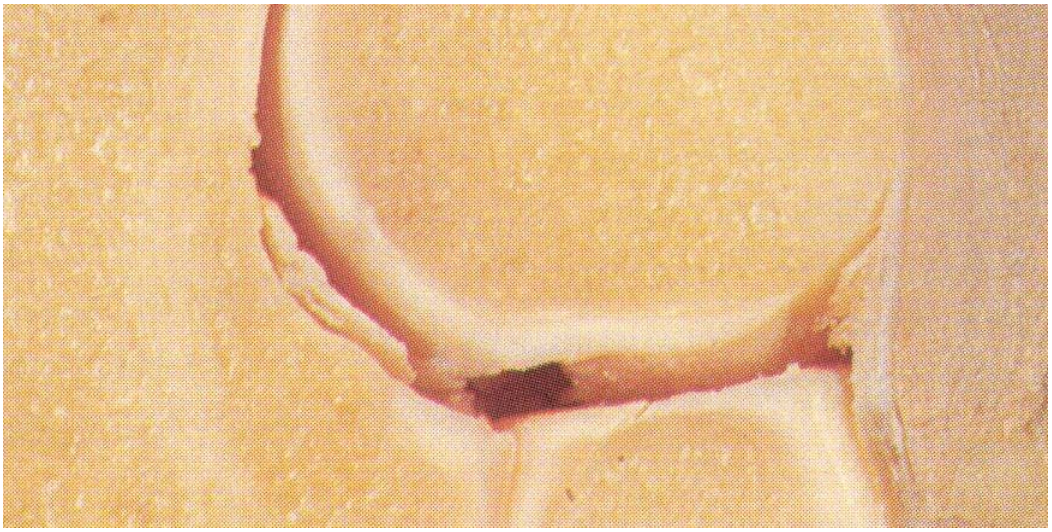
3. **What is the difference between validity and reliability**

Validity can be defined as how well the instrument actually measures that which is intended to be measured and reliability is how consistently the phenomenon is measured. An analogy is target practice. Validity is how accurately the gun is, that is does it hit the bulls-eye. Reliability is the spread of shots. High reliability is a tight group even if the group is nowhere near the bulls-eye.

What's the pathology

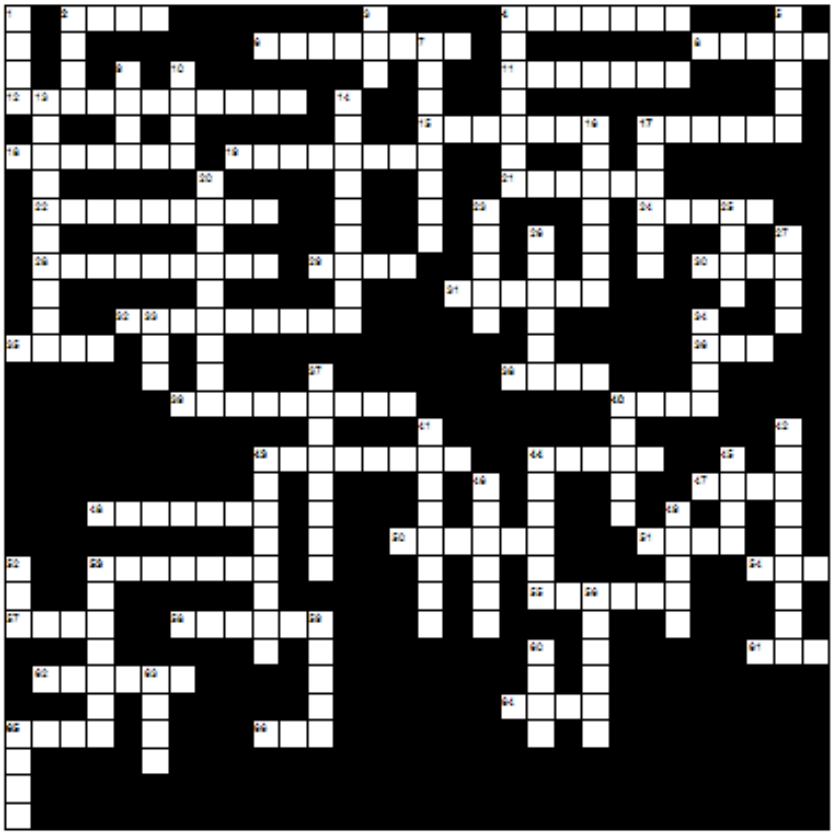
You would see this after trauma such as an MVA where there was a direct blow to the head. What is it?

What is it?



Not all of the clues are PT related and not all are difficult. The solution is on the next page.

March 05



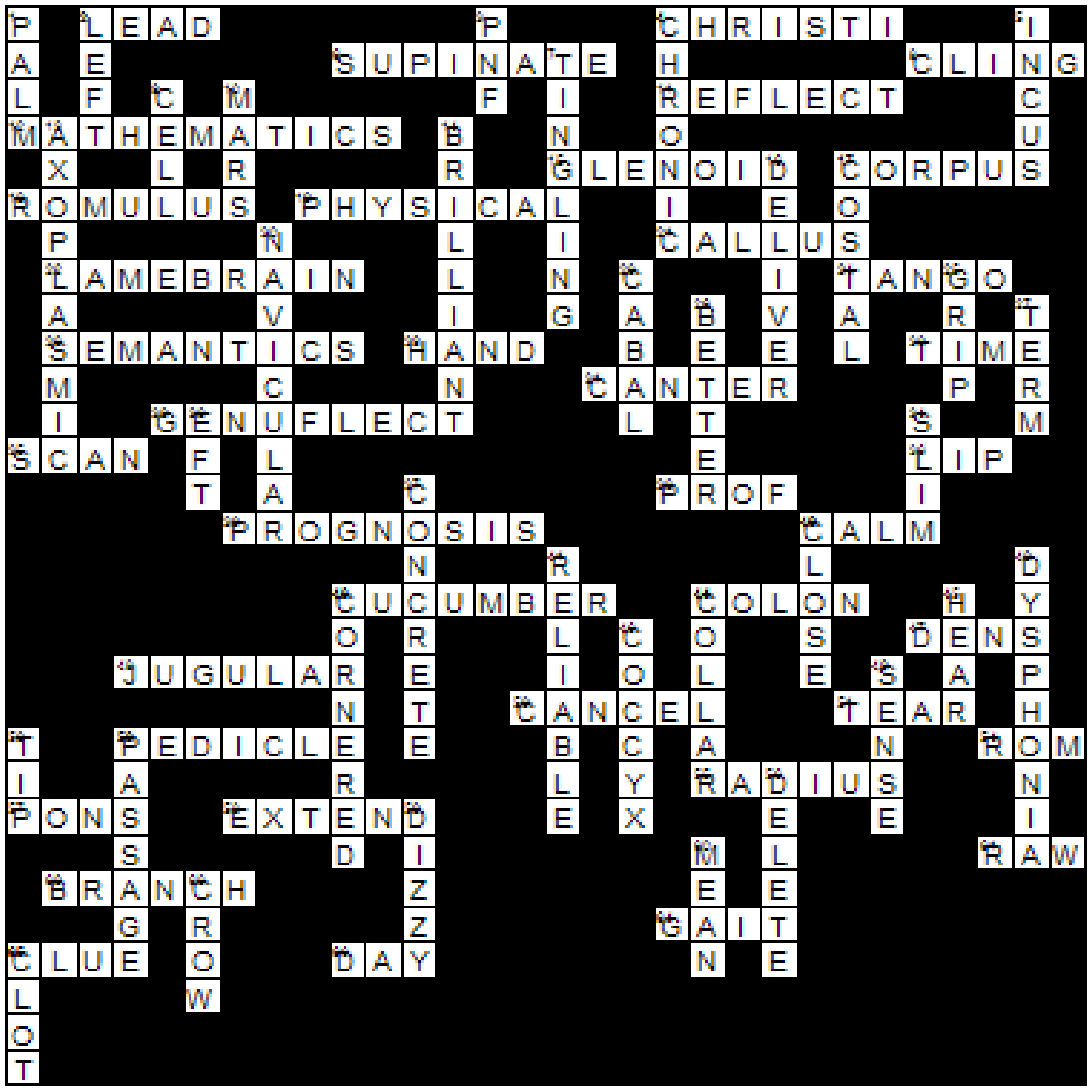
Across

2. Heavy and in front
4. The other part of the Texan town
6. Turn up
8. Hang on
11. Something you should do periodically and not just in a mirror
12. Universal language
15. Major stabilizer of the shoulder
17. The body tart of a Texan town
18. A founder of Rome
19. Half of what we are
21. Hardened fracture product
22. Crippled mind
24. Last done in Paris
28. More than merely language
29. The body part in mano a mano
30. The fourth dimension
31. Done on horseback
32. Curtsey
35. A superficial look
36. One came out of Louisville
38. A shortened teacher
39. Prediction
40. At rest
43. Found in the sea and in your salad
44. Grammar in the gut
47. A peg in the neck
48. The bit that the ruthless go for
50. Put a stop to
51. Done along perforated edge
53. The vertebral foot
54. Often limited and also found in computers
55. Part of a circle in the arm
57. Bridge in the head
58. Stay longer or shorten
61. Backwards or forwards it is usually disgusting
62. Ramus
64. Spelled differently this lets you into the front yard
65. There are many in this puzzle
66. Sun time

Down

1. Tree and body part
2. Opposite of right
3. Reeduction acronym
4. Longterm
5. One of the smaller bones
7. Parasthesia
9. Human or technological, it's your call
10. Fourth planet out
13. A form of transportation
14. Bright
16. Hand over
17. To do with the thorax just short of the sea
20. Bone in shipshape condition
23. A secret group
25. You can lose this if you are not careful
26. Improved
27. Specified period
33. Amphibian
34. Not fat
37. Undoubted support
40. Shut up
41. Dependable
42. Voice loss
43. We all feel this from time to time
44. A supportive arrest
45. Add an "H" to the organ and it is its sense
46. It is at the tail end of things
49. Not as common as you might think
52. Backwards it is a hole
53. You wish your travelling friends a safe one
56. Take out
59. Wobbly
60. Indifferently nasty
63. A bird you do not want to eat
65. Congeal

March 05



March's Quizzes for Fun

Anatomy.

1. What is the primary difference between the lumbar disc and the cervical disc in adults
2. What is the principle difference between the lumbar disc and the cervical disc in the neonate
3. What structure forms the anterior aspect of the zygopophyseal joint
4. Which nerve supplies the sensation to the disc and zygopophyseal joints

Pathology.

1. Define the term "contained disc herniation
2. Pressure on the cauda equina results in which, upper or lower motor neuron signs
3. Describe the characteristics (distribution and quality/nature) of nerve root pain
4. What are the pre-eminent signs of an uncontained lumbar disc herniation based on best evidence

Research.

1. What is the main thing that differentiates a theory from a speculation
2. What is a systematic error in terms of reliability measurement
3. What is prevalence
4. What is the difference between a case study and a single-subject design

Don't curse the darkness, light a candle.

Editor Jim Meadows

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