

The Diagnostic and Injury Center of Houston LLC



**OCT/NOV 2011
Newsletter**

Evidence Based Integrative Medicine

Your “One Stop” Health Care Facility

- Injury Assessment/Diagnosis
- Digital X-ray
- Physical Modality (Therapy)
- Rehabilitative Exercise
- MRI-CAT Scan
- Medical Care
- Orthopedic Consult and Care
- Chiropractic Care
- Pharmaceutical Management
- Joint and Trigger Point Injections
- Lab (Blood) Diagnosis & Urine
- EKG
- Mild Traumatic Brain Injury Assessment
- Surgical Procedures
- Interventional Procedures – ESI, Spinal Blocks, SI Joint Injections

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THIS MONTH

Chemical Radiculitis

Pedestrian vs. Electric Car

More Isn't Better

Low Back Injury and Delta V

Application of Physical
Modality or Therapy May
Be Fraud

Breast Augmentation Injury
and MRI

Condition of the Month –
Facet Generated Pain

Differential Diagnosis of
Discogenic, Neurogenic,
or Facet Generated Pain

Term of the Month

Your "One Stop Health Care
Facility

CHEMICAL RADICULITIS

Radicular Pain Without Nerve Root Compression

I am frequently asked how can a patient have upper and lower extremity pain, numbing and tingling in the absence of nerve, spinal cord or thecal sac compression. Chemical radiculitis is the simple answer. The pain is generated due to inflammatory response from the insult of the disc. The evidence points to a specific inflammatory mediator of this pain. The inflammatory molecule, called tumor necrosis factor – alpha (TNF) is released by the disc and the facets. TNF also known as cachectin is a cytokine that has a wide variety of functions. It is a potent pyrogen (fever/inflammation producer) causing fever and inflammation by stimulation of interleukin -1 secretion. Nerve compression does not have to exist to have radicular features or symptoms after trauma.

"The Lancet", vol 302, issue 2824, 11 Aug 73, PGS 320. Chemical Irritation of nerve root in disc prolapse

"Pain" 127, 11-6, Peng B, Wu W, Li Z, Guo J, Wang X, Jan 2007.

NEWS YOU CAN USE

MORE ISN'T BETTER

In 1979 the National Highway Traffic Safety Administration altered its new car assessment program. Crash testing speed was increased from 30 to 35 mph. This 5 mph increase resulted in a 40% increase in crash kinetic energy. New test crash findings with the higher kinetic energy loading resulted in the construction of heavier, stronger cars. Heavier, stronger cars resulted in less death but a significant increase in injuries from low impact trauma. It is interesting to see how history repeats itself. Severy found in early crash research in the forties and fifties that heavier, stronger cars resulted in less death but more injuries. Cars at that time were reduced in strength with more crumple zones resulting in reduced injuries. Since 1982 vehicle stiffness has increased by 34%.

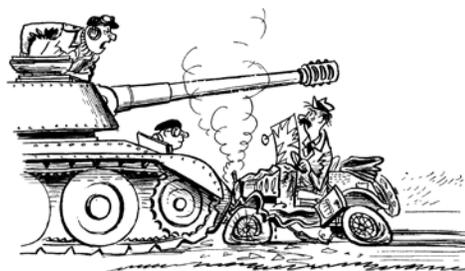
APPLICATION OF PHYSICAL MODALITY OR THERAPY MAY BE FRAUD

The application of physical modality, even under the written orders of a treating doctor, cannot be performed without the presence of a licensed health care provider in the facility in which the modality is applied.

LOW BACK INJURY AND ΔV (DELTA V)

Low back injuries are proportional to the integrity of the seat of the occupant of a vehicle. Seat backs of all vehicles bend at approximately 15 mph Delta V. At 25 mph Delta V, most seats break. The potential for lumbar injury increases as support decreases.

Delta V is the change in velocity of a bullet (striking) or target (struck) vehicle.



BREAST AUGMENTATION INJURY AND MRI

Breast injuries frequently occur due to seatbelt compression during motor vehicle trauma. Women who have had breast augmentation can suffer implant rupture and leakage as a direct result of this type of trauma. MRI is an excellent and preferred tool in the diagnosis of rupture, rip, tear, fold, or leakage of breast implants.

NEED MORE FORENSIC ADVICE?

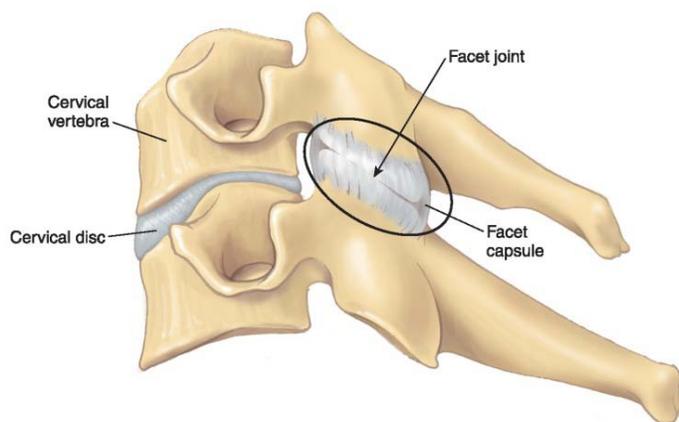
The Diagnostic and Injury Center of Houston, LLC constantly strives to maintain the most advanced research data on kinetic (motion) induced and motor vehicle crash injury, crash kinetics, and forensic data. Need advice on a crash or problem injury? We can help. If you don't know what to look for, you can't find it. Call us – (281) 890-2225.

CONDITION OF THE MONTH

FACET GENERATED PAIN

Pain is frequently generated from four primary sources of the spine. The disc, the spinal cord and nerve roots, chemical response due to trauma, and the facets or zygapophysial joints. Facet Syndrome occurs 55% in the cervical spine and 31% in the lumbar spine. The two facet joints of each spinal segment are the rear or posterior part of the spinal segment tripod. This tripod is composed of the two facets and the vertebral body and disc. Facet generated pain is most frequently noticed on extension of the spine.

The facets are formed at the top and the bottom processes of each vertebral segment. In the low back (lumbar spine) facets provide about 20% of the twisting stability in the low back. Facet joints prevent each vertebral segment from slipping over the one below. The facet



joints are surrounded by a capsule which contains lubricant for the joint. Each joint has a rich supply of tiny nerves which provide painful stimulus when the joint is injured or irritated. Inflamed facets can cause powerful muscle spasm. Facet generated pain can be a direct result of trauma, degenerative process caused by age wear and tear, dehydration (lack of lubricant) of the facet capsule.

Facet syndrome is a commonly overlooked cause of the low back pain. Diagnosis may be made by way of x-ray, MRI, or CT imaging. Treatment protocols with facet generated pain may include non-steroidal anti-inflammatory drugs, oral corticosteroids, or interarticular injections. In severe cases facetectomy and spinal fusion may be warranted. Manipulation of the spine may decrease or increase facet generated pain.

DIFFERENT DIAGNOSIS OF DISCOGENIC, NEUROGENIC OR FACET GENERATED PAIN

Specific exam procedures must be applied to appropriately diagnose the various pain generators of the spine. Differential diagnosis is made based on assessment of subjective complaints, objective exam findings, x-ray findings, and results of MRI, CT, and EMG/NCV. The clinical picture must be clear and concise. Patients with vague pain patterns require in depth exam by a experienced doctor with good diagnostic skills. The Diagnostic and Injury Center's staff is very experienced in differential diagnosis of low back pain patients.

TERM OF THE MONTH

COEFFICIENT OF RESTITUTION (COR)

This term describes stiffness of a motor vehicle in terms of velocity. A knowledge of COR is critical in understanding low speed rear impact trauma (LORSIC). The difference in vehicle stiffness results in variables of injury sustained in motor vehicle trauma. This term, interestingly, is not taught in accident crash reconstruction school.