GENLIFE
Regenerative Medicine

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This article was dictated and written by my esteemed colleague, Dr. Michael Brown, M.D. DC. Dr. Brown was a wonderful teacher and superb doctor who passed away too young. The information dictated by Dr. Brown still remains pertinent today and I corrected spelling and grammer to make it more easily readable and I find it useful to provide to my patients. I hope you like it.

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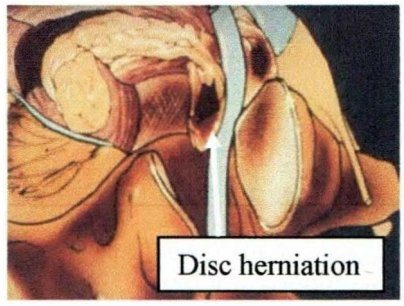
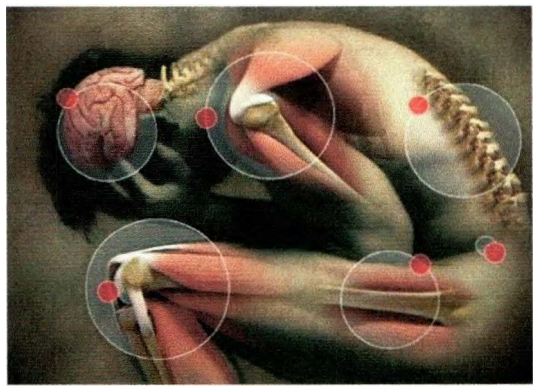


There are many combined syndromes that a spine physician needs to be concerned with. One common problem that we have encountered on countless occasions is a patient who presents with a herniated disc at one level and an undiagnosed annular tear at the level above or below. These patients can present with a herniated disc and if they see a spinal surgeon they will be diagnosed by MRI as having a herniated disc. They could undergo surgery for the disc herniation only to be disappointed the back pain remains the same or worsens after surgery because the segment above or below the herniated disc was also painful. Worse yet, if the patient undergoes a spinal surgery with fusion at a single level with an unknown tear in the disc above or below then the fusion they can experience worsened symptoms because of the additional stress applied to the unknown disc with a tear. It is rather commonplace for patients to describe their back pain as being worse after spinal fusion surgery. One of the potential reasons for this is an undiagnosed disc pain syndrome above or below the fusion that was carried out that was not recognized until after the fusion.

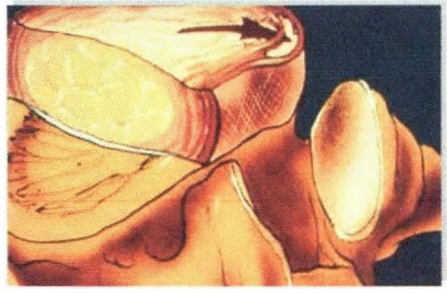
Patients with annular tears typically do not have pain arising only from the disc. Patients with annular tears often have pain arising from the disc as well as the facet joints. They may also have many other pain generators like the bursa of the hip, the SI joint, the muscles, etc. An annular tear can leak chemicals on the nerve root causing nerve root pain which causes low back and leg pain. But this low back pain and leg pain can come from of multiple origins. To make matters worse the facet joint and ligaments and the other soft tissues refer pain into the leg as well confounding the diagnosis of where the leg pain is coming from. One needs to be aware of all of the referred pain patterns of the various soft tissues of the spine including the ligament and disc to be able to sort out the multiple pain sources of a patient presenting with chronic back and leg pain.



At any one time where there is chronic joint dysfunction and pain one will typically have tight and sore muscles as well. The muscles become a secondary source of pain. Imagine the patient presents with multilevel degenerative disc disease, with multilevel facet joint pain associated with instability of the joints leading to low back and referred leg pain. The patient then has thickening of ligaments inside the spine and narrowing of the spinal canal where there is now pressure on nerves that cause leg pain. However they also have pain from the bursa and tendons of the hip which also refer pain into the buttock and leg. Now the patient presents with joint pain, disc pain, nerve root pain, referred pain into the leg from the soft tissues as well as hip pain. Sounds like a nightmare? This scenario is extremely common. A patient with such a combined pain syndromes may go from healthcare provider to health care provider only having a portion of their symptoms addressed.

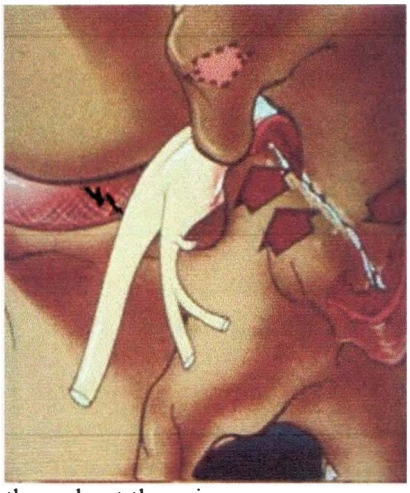
It is also commonplace for a chronic pain patient to be seeking chiropractic or osteopathic care or physical therapy for manipulation. The patient experiences some relief from the efforts of the well-intended clinician but the symptoms recur. The patient obtains partial symptomatic relief because mobilization of joints may improve some symptoms but cannot address others. For example the patient may have instability that causes recurrent joint dysfunction as well as ligamentous pain but may also have discogenic pain. This is why I consider the "integration" of disciplines and methods so important. I strongly believe in the concept of "integrated pain management". Having a background in chiropractic, osteopathic care, acupuncture, rehabilitation, biomechanics and interventional spine procedures allows me to integrate methodologies. It also helps us in communicating with other healthcare providers and different disciplines so that we can coordinate care to maximize outcome.

Patient who have discogenic back pain always have muscular pain. They may find themselves seeking frequent therapy from massage therapist. The massage therapy would be much more effective if it was combined into and integrated with advanced pain management strategies that were directed to the multiple causes of the pain and specifically directed to the presenting pathology. It should be becoming painfully obvious that it is much more common for a patient to present with multiple pain sources rather than a single pain source. Muscles become adaptively shortened and contracted and remain tender to touch. Deep massage may not relieve the sustained shortening of the muscle for a few hours but without other interventions that could be used in conjunction with the massage therapy they will not show sustained improvement.

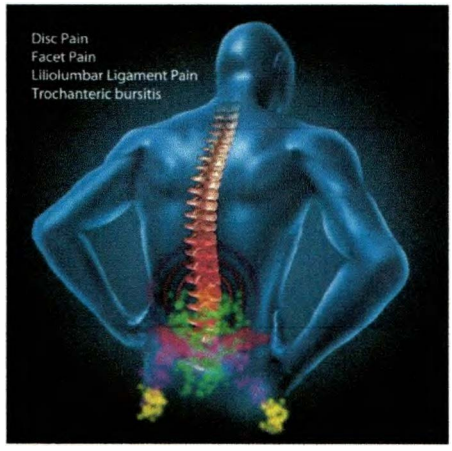


You may ask, why do we have so many things going on at the same time? As I have already stated before when the inner annulus begins to break down and tears the spinal segment destabilizes and subtle instability ensues. When annular tears occur they often propagate and break the disc down internally leading to failure of the annulus of the disc. This destabilizes the disc and spinal segment which can lead to a breakdown of the disc internally and lead to failure and tear of the internally annulus.[1] Osti and his colleagues in their award winning research taught us a great deal about the healing potential of the annulus of

the disc. In fact the annulus does not heal the tears and fissures of the disc and in fact they propagate further and lead to further degeneration and breakdown of the disc. Many people ask if tears in the disc can heal. I often have to break the bad news that experimentally induced lesions in the disc have not been shown to heal well.[2]



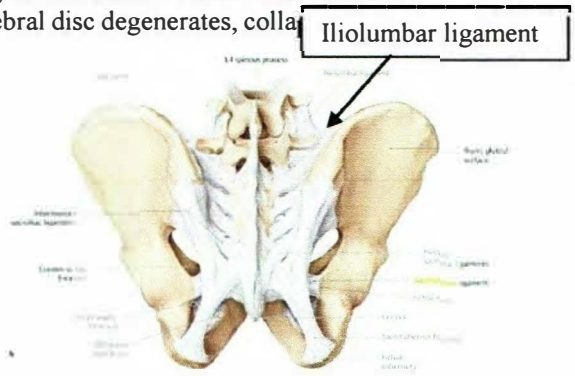
When tears in the disc occur there is an attempt of body to heal these tears especially in the periphery of the disc. Despite this when tears are present it makes the disc susceptible to fragments of the nucleus slipping into the persistent tear causing acute episodes of back pain. A tear can start in the periphery and propagate into the inner annulus.[2] When this tear occurs inflammatory cells can perforate and extending into the annulus of the disc causing the disc to become more pain sensitive.[3] Tears in the disc alters the biomechanics and behavior of the segment and thus transfers the weight bearing of the spinal segment to the facet joints which also beginning to break down the supporting ligaments and cartilage. This sets up spinal segmental instability which causes further dysfunction and pain. This phenomenon does not just occur at a single level but is frequently happening in multiple levels throughout the spine.



This is a setup for muscular pain, ligamentous pain, joint pain, nerve root pain, disc pain which begins to propagate a whole chronic pain cycle. The patient becomes activity and exercise intolerance and thus physically deconditioned. Only through comprehensive and combined therapeutic interventions is an individual going to experience success in treatment. We must address spinal segmental instability, ligamentous pain, pain from the disc, pain from the muscles and nerve roots. We often have to address this at multiple locations. We must address the patient's movement patterns and physical deconditioning and their core strength. All of this has to be done in a coordinated and integrated manner to be successful. This is the way successful treatment of chronic pain from the spine is evaluated and treated. Treatment of chronic back pain is not conducive to opioid medications. In fact opioid medications spiral an individual into further difficulties. We will address this issue in another article on opioids and chronic pain. This is why our focus is rehabilitation and regenerative therapy and not opioid medications and surgery.

The iliolumbar ligament in back pain:

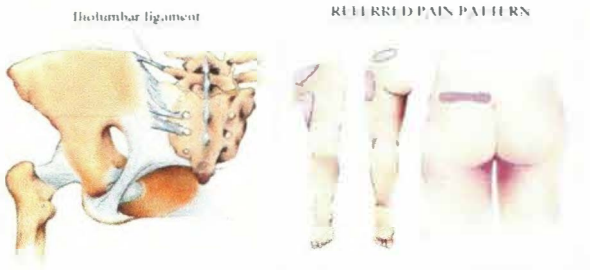
Another rather common source of pain is a special ligament found in the low back called the iliolumbar ligament. Remember that as the intervertebral disc degenerates, colla



unstable due to annular fissures or internal disc disruption it can place stress on this ligaments. One of these ligaments is the iliolumbar ligament. The iliolumbar ligament is an important broad ligament that attaches the L4 and L5 vertebra to the pelvis shown in the picture to the above. The iliolumbar ligament appears to be a major stabilizing component between the vertebral spine and the pelvis. As the intervertebral disc degenerates the suspensory control and stabilizing role increases.[4] The iliolumbar ligament can become compromised due to the excessive load it must try to control and endure. As this ligament becomes incompetent it is capable of becoming a source of chronic pain. We have learned that this ligament is richly innervated with pain sensitive nerves.[4]

In my experience the iliolumbar ligament can be a rather common secondary source of pain. It is often seen in conjunction with chronic facet and disc pain. Because this ligament has an important role in stabilizing the lower segments of the lumbar spine I commonly target this ligament and attempt to strengthen it using prolotherapy. I recall a school teacher who was incapacitated with low back pain. She had a positive L5,S1 discogram. Her disc space was collapsed and the disc itself was severely degenerated. Our staff anesthesiologist recommended spinal fusion surgery. The consulting orthopedist agreed. She returned back stating she would never undergo a spinal fusion and requested that I exhaust all other avenues. I related that it would be a long process. She did not care and we proceeded to do a series of prolotherapy injections at the attachments of the iliolumbar ligaments and some other supportive ligaments along the sacroiliac joint and spine. It took months but as we proceeded to strengthen the ligament she began to improve. One could feel this as a needle was reinserted into the ligament with each consecutive injection. She went on to have almost a complete resolution of low back pain. She now enjoys jazz dancing and remains pain free most of the time. We have had to perform one or two injections over this ligament per year to keep her pain free. Because of the extensive underlying disc degeneration the ligament becomes compromised over time and begins to give her some mild recurrent pain. Repeat injections keep this under control. I must state that this process took 6 – 8 months to accomplish and about 8 injections. In this case the patient was patient willing and patient enough to wait it out. I currently include this ligament in diagnostic blocks as a comprehensive workup on my chronic back pain patients.

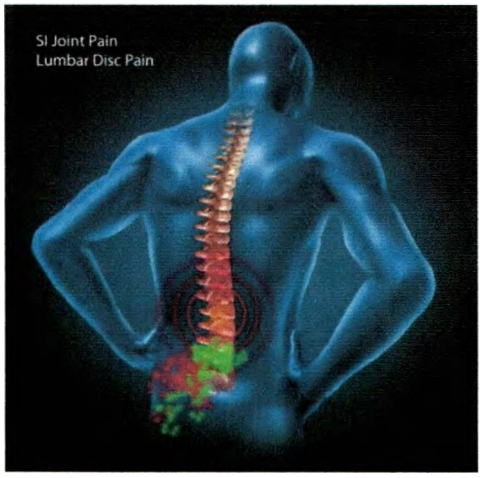
There are a few more things that you must understand about this important ligament as a combined source of pain with other structures. As all ligaments this iliolumbar ligament is capable of generating pain itself. A common pain pattern or distribution associated with the iliolumbar ligament is shown in picture to the right. In addition to the pain in the lower back one will commonly experience a referred pain over the pelvis into the groin as shown in the



picture. It is common for a back pain patient to have both back pain and groin pain caused by this problem. We have found prolotherpy applied to the iliolumbar ligament in addition to dealing with the offending disc will improve the odds of gaining better symptomatic improvement.

Disc pain and other joint dysfunctions:

Another common disc / joint combination syndrome is chronic sacroiliac dysfunction or instability in addition to disc pain. In fact, one could have disc pain, facet pain, iliolumbar ligament pain and sacroiliac pain as well as myofascial or tendon pain in the hip all at the same time. That is not uncommon at all. One could have disc pain and sacroiliac pain and the pattern may look like the picture noted on the right. One could see how this clinical picture could cause confusion amongst healthcare practitioners trying to sort out the source of this patient's pain. This combination of pain sources is not all that uncommon! More than likely if you had a combination syndrome like this it takes a physician that is patient and willing to sort this type of thing out.



Discogenic back pain from annular fissures or tears can commonly be seen in combination with many conditions. In fact it is the rule and not the exception. It is the reason why many patients find themselves walking through the medical maze trying to find answers to their chronic pain problem and finding little assistance or help. Because it is common to have many or multiple sources that are at the heart of ones chronic pain no wonder that spinal fusion surgery has such a high failure rate. Almost everyone is acquainted with an individual who has had chronic low back pain and has decided to undergo a spinal fusion. After the spinal fusion instead of getting better they are worse! How could this be? Performing a spinal fusion just places more stress on other structures that were also sources of pain. The patients are already compromised with multiple pain generators and the fusion compounds the problem.

The combination herniated disc and annular fissure:

I alluded to this previously but will discuss it again to make an important point. Let us consider the following scenario. A patient with a herniated disc goes to a surgeon and is noted to have a herniated disc on the MRI. The patient consents to surgery for that condition. The patient obtains some relief of leg pain but continues to have severe back pain and considers the surgery a failure. Why would the patient continue to have chronic back pain thereafter? The answer to that question is a bit complicated. One possible reason could be that the surgeon dealt with one lesion or problem but failed to recognize a secondary source of pain. For example the patient may have an internally disrupted disc or painful fissure at one level and a herniation at the other. This is not uncommon at all to find in a patient. A common scenario would be for example one might find a herniated disc at L5-S1 and an annular fissure at the L4-L5 disc. One might find the herniation at L4, L5 and the annular tear or internally disrupted disc at L5, S1. The MRI alone is inadequate to sort this complex problem out.

Occasionally techniques such as discography and other advanced anesthetic block procedures done under fluoroscopy may be needed to complete the diagnostic pictures.

Once we have sorted out all of these details then one can consider a targeted and definitive treatment strategy. It is only then when we would could even consider a surgical referral if needed. It is my position that more often than not this should all be done before exploration of surgical options are made.

Remember if we were relying on MRI only we can easily overlook a lot of the contributing factors that are the cause of the pain. We can easily miss one of these this combined problems.

I am sure that this all sounds overwhelming and confusing doesn't it? Well it is in a way. This is why you need to be an informed consumer and be more aware of what may be going on with your back. If you are seeking healthcare services for chronic pain and you are not aware of some of the material presented you can find you experience rather disappointing. I have taken the time to write this material to help people through the journey. Things are bad enough when you are informed. However when you are **not informed** there is little chance you will find your way through without a guide.

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