

Vertebrogenic Back Pain

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Low back pain is one of the most common health complaints in the United States and around the world. Several structures have been implicated as possible sources of chronic low back pain which include:

- Degenerative disc disease (discogenic pain)
- Herniated discs
- Spinal stenosis
- Facet joint dysfunction
- Sacroiliac joint dysfunction
- Spondylolisthesis
- Vertebral compression fractures
- Trauma
- Vertebral body endplates (vertebrogenic pain)



Even though diagnostic radiologic imaging and anesthetic block techniques are used, no apparent cause can be found in approximately 50% of cases surrounding it. Recently, new research has indicated that the vertebral body endplates can be a common source of low back pain. This is also referred to as vertebrogenic pain. The vertebral body endplates are innervated by the basivertebral nerve (BVN), and these nerve endings have been shown to increase in damaged and degenerated endplates. This nerve is the target for new treatment of chronic low back pain. Recognizing vertebral endplates as the source of pain can usually lead to successful treatment and the avoidance of unnecessary surgery in many cases.

Clinical Picture

Most patients with vertebrogenic pain complain of constant, localized, axial low back pain with occasional leg pain. Symptoms are exacerbated with sitting, bending forward, or coughing/sneezing. However, there

is significant overlap of other causes of low back pain such as discogenic pain or facet joint pain.

Diagnosis

The key to diagnosing vertebrogenic back pain is made with an MRI. MRI findings of Modic changes (reactive marrow changes such as inflammation/edema) in the vertebral body endplates support the presence of vertebrogenic pain.

Causes of Vertebrogenic Pain

Intervertebral disc degeneration may cause abnormal forces exerted on vertebral body endplates. Consequently, this leads to damaged and degenerated endplates and the proliferation of basivertebral nerve (BVN).

Treatment of Vertebrogenic Pain

Many patients may not respond well to conservative treatments such as physical therapy, spinal injections and medications. In addition, spinal surgery such as lumbar fusion often times has not been shown to be efficacious for patients experiencing discogenic or vertebrogenic low back pain.

For patients experiencing intractable vertebrogenic pain, a new minimally invasive Intracept procedure where basivertebral nerve (BSN) is targeted and ablated has been shown to provide durable relief. Recent studies have shown that patients undergoing the procedure still have durable benefits after a 2 year follow up study.



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Dr. Thaiduc Nguyen is Double Board Certified in Pain Medicine and Anesthesiology. He specializes in advanced interventional procedures such as Spinal Cord Stimulation, Peripheral Nerve Stimulation, Dorsal Root Ganglion Stimulation, Targeted Intrathecal Drug Delivery, Minimally Invasive Indirect Lumbar Decompression (Superion), Minimally Invasive Lumbar Decompression (MILD), Vertebral Augmentation, and Minimally Invasive Discectomy (Disc FX). Dr. Nguyen graduated from the Arizona College of Osteopathic Medicine and completed his residency in Anesthesiology at the Medical College of Wisconsin. He also completed a fellowship in Interventional Pain Medicine at the University of Cincinnati.