

# Moving Away from Fusion by Treating the Pain Generator: The Secrets of an Endoscopic Master

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- Chronic back pain afflicts hundreds of millions of people worldwide
- The most common early cause is deterioration of the intervertebral disc from trauma or aging
- Current Therapies to treat back pain from nonsurgical techniques: ie. Physical medicine + pain management, and oral analgesics, are followed by various techniques of MIS and traditional disc surgery, but PREMATURELY ending in fusion.

There are viable minimally invasive technologies and minimally invasive surgical procedures that make it feasible to move away from fusion as an early surgical option for treating chronic low back pain if non-surgical methods fail. Surgeons who are familiar with and who have training in endoscopic spine surgery are able to utilize the transforaminal endoscopic approach to the lumbar spine and use these endoscopic techniques to identify and treat the pain generators with the least invasive, most effective methods available. Sub-acute and chronic causes of debilitating back pain are effectively treated in trained hands. The “surgeon factor” is a critical step for step for each endoscopic surgeon who needs to possess a wide range of surgical experience and skill to pick the procedures and techniques that works best, limited only by their own surgical experience and ability. The surgeon should:

- Use the most effective, least invasive surgical procedure to treat the pain generator Protect normal anatomy
- Adopt more than one technique surgical philosophy of their mentor
- Learn the technique and advance slowly and deliberately, as surgical skills vary with each individual

If the surgeon operates with local anesthesia and only minimal sedation, he will be able to communicate with patient during endoscopic surgery and gain valuable clinical knowledge about the pain generators in the lumbar spine. The transforaminal endoscopic approach is the least invasive approach, performed under local anesthesia with or without sedation. For best results, once non-surgical methods fail, early surgical intervention brings the best results.

The endoscopic transforaminal technique is not a “see one, do one, teach one” procedure. Good surgeons adopt a slow and deliberate time table, progressing at the surgeon’s own speed, being able to utilize different endoscopic systems designed by endoscopic masters that match their own methods and techniques, like “martial arts”. Having a mentor surgeon helps immensely.

The Secrets to a successful endoscopic career entail dedication to this surgical technique:

- It takes 2-5 years to learn how to do it well
- It takes 10 years of experience to learn what works well and what does not
- Know pitfalls and how to avoid complications
- Know your own personal limitations
- Operate safely, know when to quit!

## Fusion as the “State of the Art” standard of care is not a perfect solution

- When Motion is eliminated, adjacent level deterioration accelerates
- Altering the patient’s non-painful individual anatomy is usually not needed except for severe deformity or instability
- Each person’s anatomy will adapt naturally with age
- Fusion will ultimately lead to adjacent level problems more than just decompression without creating instability
- Even disc replacement arthroplasty has a time limitation, as the natural response of aging is for the body to limit mobility so that 10 years later, natural stabilization and natural fusion is the result
- Surgical Fusion for pain is not needed for long term clinical success
- Current trends and new technology will allow stabilization, but also preserve motion
- Non-fusion technology is positioned to be the largest area of growth in the treatment of spinal pathology (personal opinion)

Intradiscal Therapy focuses on the earliest source back pain, the disc. FDA approved techniques available include a level I evidence based needle technique, chymopapain, a fluoroscopically guided disc mechanical and thermal annuloplasty technique, (Disc Fx by Elliquence) and an endoscopically visualized technique discectomy and annuloplasty technique, (SED<sup>+</sup> with thermal annuloplasty). Dynamic stabilization with interspinous implants, nucleus augmentation with hydrogel implants, and biologics round out the future of intradiscal techniques.

In order to achieve MIS surgical goals:

- Understand the patho-physiology of pain
- Identify and visualize the patho-anatomy of pain
- Surgically treat the pain generator in a staged manner
- Reserve salvage procedures such as fusion, as the last procedure except for gross instability and deformity

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Start with intradiscal decompression and thermal annuloplasty. To be effective, the nucleus embedded in the annular tear should be removed from the annular tear.

- Symptomatic Lateral recess stenosis is more common and symptomatic than recognized by CT scan or MRI
- Stenosis is effectively decompressed, aided by transforaminal DIAGNOSTIC and epidural therapeutic injections

- Success of Transforaminal epidural blocks translates into success with foraminal endoscopic decompression

*There are multiple non-fusion options before fusion. Adoption of transforaminal techniques, in my opinion, and in my experience with over 10,000 procedures will provide results that can eliminate the need for fusion for up to 75% of patients who opt to avoid fusion as a first line of treatment, even in the face of mild instability and deformity.*