Dr Chris Huang and Dr Ralph Mobbs

Endoscopic Spine Surgery: What It Is and What It Isn't

Not to be confused with traditional procedures, Endoscopic spine surgery (ESS) uses a tiny incision and specialized instruments to surgically treat spinal disorders.

Minimizing the amount of tissue injury, trauma and post-operative pain are important to optimize any patient's recovery from back surgery. Over the years, we have seen great strides in spine surgery technology, equipment, instrumentation, and procedures. Endoscopic Spine Surgery (ESS) is currently the foremost example of how far we've come in the surgical treatment of our patients with back and neck pain.

What Is Endoscopic Spine Surgery?

By definition, ESS is a surgical procedure using micro-sized incisions (less than 1-cm) and small tubular systems in combination with an endoscope to visualize the surgical field. While endoscopic surgical approaches are commonly used to treat other areas of the body (e.g., gastrointestinal), advances in optics, visualization of tissues, and spinal imaging make ESS a surgical treatment choice for many patients.

Endoscopic spine surgery is an advanced, state-of-the-art form of minimally invasive spine surgery designed to provide the patient a quicker recovery time and less recurring pain than traditional spine surgery methods. ESS also can help preserve normal range of spine mobility post-operatively. In some cases, the ESS procedure can be performed awake, instead of general anesthesia, decreasing overall medical risks in patients who are older and/or have co-existing medical disorders that may increase surgical risk.

Let's Not Confuse ESS with Other Types of Spine Surgery

Endoscopic spine surgery should not be confused with traditional procedures—such as minimally invasive, micro invasive and/or laser spine surgeries. In the experienced hands of a spine surgeon who regularly performs endoscopic spine surgery using tubular retractors and the endoscope—the surgery is performed in a different way offering patients many potential benefits, including:

1. Less blood loss (usually less than a drop of blood)
2. Less post-operative discomfort or pain (many patients require no medication after surgery)
3. Fast recovery and healing (many operations are performed as day surgery)

However, ESS may not be appropriate for all spine surgery indications, such as scoliosis, spinal instability, cancer, or trauma. In those types of cases, the surgeon may recommend a traditional open or minimally invasive spine procedure.

Benefits vs. Risks

As with any type of spine surgery, including ESS, there always are benefits and risks associated with surgery. That's why it is important you and your spine surgeon consider and discuss your personal potential benefits and risks related to treatment of your spinal disorder with an endoscopic spine surgery procedure.

Potential Benefits: Small incisions and hyper-targeting of the surgical site means less trauma to skin, muscle, and soft tissues resulting in less blood loss and a faster recovery. Furthermore, most ESS procedures can be completed in about one hour allowing the patient to be back on their feet a few hours following post-operative recovery.

Potential Risks: ESS is a highly specialized surgical skill that is somewhat still in its infancy. As such, relatively few spine surgeons perform ESS techniques with regularity to be proficient. Usually, endoscopic spine surgery is not suitable for revision surgery, cases of clear spinal instability, high-grade spondylolisthesis, and/or cancer.

How is Endoscopic Spine Surgery Performed?

First, the patient is prepped for surgery including administration of a local anesthetic to block pain. A 1cm or smaller skin incision is made and a tubular trocar (about the width of a pencil) is inserted. Depending on the patient's specific diagnosis, the endoscopic technique may access the spine using one of two approaches: either an intralaminar (from the back of the spine between two laminae) or transforaminal (from the side of the spine into the neuroforamen; a nerve passageway) approach.

Next, a tiny camera is inserted through the trocar to the targeted area of the spine. Throughout ESS, the camera captures and projects real-time images of the operative site onto a monitor in the surgeon's direct view. The endoscopic camera assists and guides the surgeon during the surgical procedure.

Are You a Candidate for ESS?

Many patients who are candidates for endoscopic spine surgery have been diagnosed with common types of spinal disorders. Some of these diagnoses include moderate to severe disc herniation, facet arthropathy, sciatica, and spinal stenosis. However, spine surgery is not always the first treatment. It is generally recommended that types of non-surgical treatment (eg, spinal injections, physical therapy) be tried before any type of spine surgery, including ESS.

How Do I Find an ESS Surgeon?

Dr Huang and Mobbs have performed hundreds of Endoscopic Spine Surgeries and as a team, would have done far more than any other surgical team in the country. Before choosing an Endospine surgeon, do your research into the expertise and training of the surgeon/s.

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Concluding Thoughts

Advances in technology and technique have developed endoscopic spine surgery — this surgical option could be considered revolutionary in nature. In the hands of a highly skilled and experienced spine surgeon, the potential benefits of this version of minimally invasive surgery may provide relief to a new generation of patients living with chronic back and neck pain.

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