Full endoscopic spine surgery

Full endoscopic spine surgery (FESS) is a minimally invasive surgical technique used to treat various spinal conditions, particularly those affecting the lumbar, thoracic, and cervical regions of the spine. This approach utilizes small incisions, endoscopic cameras, and specialized instruments to perform surgery with minimal disruption to surrounding tissues. Here’s an overview of the procedure, its benefits, indications, and considerations:

Procedure Overview Preparation and Anesthesia: Patients typically undergo general anesthesia, though local anesthesia with sedation is also an option for some cases.

Incision and Access: A small incision (usually less than 1 cm) is made at the surgical site. An endoscope, a thin tube with a camera and light, is inserted through this incision. The surgeon uses the endoscope to visualize the spine on a monitor.

Surgical Techniques: Depending on the condition being treated, the surgeon uses specialized instruments inserted through the endoscope to remove herniated disc material, bone spurs, or other problematic tissues. Techniques include discectomy, foraminotomy, and laminectomy, among others.

Closure: After the necessary surgical actions are completed, the instruments and endoscope are removed. The incision is closed with sutures or surgical glue, and a small bandage is applied.

Benefits Minimally Invasive: Small incisions reduce muscle and tissue damage, leading to less pain and quicker recovery. Shorter Hospital Stay: Many patients can go home the same day or after a short hospital stay. Faster Recovery: Patients often experience a faster return to normal activities compared to traditional open spine surgery. Reduced Risk of Complications: Smaller incisions and less tissue manipulation lower the risk of infection and other complications. Indications Full endoscopic spine surgery is commonly used for:

Herniated Discs: Removal of herniated disc material that is compressing nerves. Spinal Stenosis: Decompression of the spinal canal or nerve roots. Degenerative Disc Disease: Removal of damaged disc material to relieve pain. Foraminal Stenosis: Enlarging the foraminal space to relieve nerve compression. Facet Joint Cysts: Removal of cysts causing nerve compression. Considerations Patient Selection: Not all patients are candidates for FESS. Factors such as the location and severity of the spinal condition, overall health, and previous spine surgeries influence eligibility. Surgeon Expertise: Successful outcomes heavily depend on the surgeon’s experience and skill in performing endoscopic procedures. Technology and Equipment: Availability of specialized endoscopic equipment and imaging technology is crucial for the procedure. Recovery Postoperative Care: Patients typically follow a rehabilitation program that includes physical therapy to restore strength and flexibility. Activity Restrictions: While recovery is faster, patients are advised to avoid heavy lifting, bending, and twisting for several weeks. Follow-up: Regular follow-up appointments are necessary to monitor healing and address any complications. Risks and Complications Though less common than in open surgery, potential risks include:

Infection: Risk is lower but still present. Nerve Damage: Careful navigation around nerves is critical. Incomplete Relief: Some patients may not experience complete symptom relief and might require further treatment. Full endoscopic spine surgery represents a significant advancement in spinal surgery, offering numerous benefits over traditional open approaches. However, thorough evaluation by a spine specialist is essential to determine if this minimally invasive option is suitable for a specific patient's condition.

see Uniportal Full Endoscopic Lumbar Fusion Surgery.

Full endoscopic spine surgery is mostly concentrated in a few countries/regions and authors. South Korea has made the largest contribution to the field of FESS. Based on the most cited keyword bursts and clusters, the focus of FESS research was found to include its indications, management, and applications [1)]

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Lin GX, Zhu MT, Kotheeranurak V, Lyu P, Chen CM, Hu BS. Current Status and research hotspots in the field of full endoscopic spine surgery: A bibliometric analysis. Front Surg. 2022 Sep 2;9:989513. doi: 10.3389/fsurg.2022.989513. PMID: 36117817; PMCID: PMC9478389.