

Epiduroscopic Treatment of Failed Back Spine Surgeries

Ali Ihsan Isik and Tolgay Satana*

Clinic of Orthopedic, Fulya Doctors Center Polat Residence Towerside Yesilcimen 12 34365 Sisli/Istanbul/Turkey.

Corresponding Author Information

Tolgay Satana

Clinic of Orthopedic, Fulya Doctors Center Polat Residence Towerside Yesilcimen 12 34365 Sisli/Istanbul/Turkey.

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ABSTRACT

Epidural fibrosis are common reason of back pain, usually related with failed back spine surgery with or without neurological deficits. Traditional open surgeries for surgical release and decompression have some poor results and complications.

Our aim is to find to pain generators and prospect of eliminating the pain with epiduroscopic treatment. This study presents 360 patients caused by Failed back Spine Surgery symptoms leading backpain. The patients underwent epiduroscopic adesiolyis restore epidural neural sturctural release. Following the procedure, our patient's satisfaction is very high and experienced significant improvements in pain, numbness, and muscle strength. Magnetic resonance assessments confirmed successful decompression of the spinal canal. Previous studies have used a measure of successful outcome $\geq 50\%$ of original pain relief as a successful outcome. Measure our study also included this point.

The study emphasizes the benefits of epdiuroscopic adesionolysis in enhancing patient recovery for failed back spine surgery. Thus, this report acknowledges certain limitations of visual and optic devices need for further development utilizing this approach.

In conclusion, epiduroscopy promise as a valuable treatment of Failed Back spines surgery instead of traditional open surgeries, offering potential advantages in terms of complications and recovery pain management. Epiduroscopic management enhances a multimodal philosophy and opens up new treatment strategies for patients. If used early on, it can control pain well before chronicity sets in.

KEYWORDS

Epiduroscopy; Failed back spine surgery; Spinalstenosis.

Introduction

Epidural fibrosis are mostly part of failed back spine surgery, usually related with failed back surgery. Traditional open surgeries for surgical release and decompression have some poor results and complications but epiduroscopic adesiolyis has very successful results reported that current literature results. It has reported that a

clinically relevant reduction in pain and disability after mechanical adesiolyis in FBSS patients [1].

Epiduroscopy is the endoscopic visualization of epidural structures. The epidural space is part of spinal canal; It is the space above the dural membrane, anteriorly, directly bounded by the Flavum,

containing the Posterior Longitudinal ligament, periosteum, and posteriorly, adipose tissue, venous plexus. Marchesini M et al. reported that presence of the dorsomedian ligamentous strand (DLS), which divides the epidural space. The possible existence of this structure still influences some clinical practice, such as locoregional anesthesia and pain therapy [2].

There is normally no fluid circulation in this negative pressure space. The epidural space is surrounded by the periosteum in the cranium and contains the venous sinuses in a dense structure. The epidural venous plexus is a valveless system that communicates with the basivertebral vein, the intracranial sigmoid, occipital, and basilar venous sinuses, and the azygous system. In this respect, the optic nerve, which has venous flow associated with the cavernous sinuses, is sensitive to changes caused by pressure increases in the epidural space [3]. There may be retinal hemorrhages and visual loss due to increased venous pressure. Ocular findings in epidural cranial hemorrhages are pathognomonic in this respect. Epiduroscopy is a treatment option and as kind of spinal endoscopy allows targeted epidural fibrosis to release and additionally to deliver analgesic pharmacologic therapy for affected nerve roots or other painful regions in the epidural space.

Treatment options provided by epiduroscopy include laser-assisted adhesiolysis or resection of pain-generating fibrosis, catheter placement, as well as support with other invasive procedures for pain relief and Failed back Spine Surgery (FBSS) [4]. Professional Endoscopy of Spine management enhances a multimodal philosophy and opens up new treatment strategies for patients. If used early on, it can control pain well before chronicity sets in.

By the way patient's history, physical examination, diagnostic modalities (Xray, MRI, Medulagraphy), nerve conduction studies should be completed blood count, coagulation tests, urinalysis very important decision making and patient selection and might be Ophthalmoscopy should be noted before intervention. Diagnostic algorithm is the key of treatment. Physical examination, to distinguish sclerotmal and radicular pain, motor deficits. Simple xray has never been underestimated than it is the most important way to understand mechanic skeletal problems. MRI is very useful to evaluate neural compromise and axial neural channel problems Computerized Tomography and for some cases myelography is also very helpful. Percutaneous discography and foraminal injections could be performed neurologic compromised.

Material and Methods

360 patients were included prospective study. All patients are selected Failed Back Spine Surgeries (FBSS). Evaluate responsible reason of FBSS mechanic and neurologic compromise Etiology of FBSS would be poor selection for surgery of the patient have had a psychological profile or pathophysiology. It could be related improper selection and misdiagnosis with inadequate preoperative evaluation and diagnostic work-up. This situation may lead to improper or inadequate surgery, which is resulted FBSS.

Our series main age is 58 years old, 97 men, 263 women, follow up 8 months (range 3-36 months). 346 patients are treated single epiduroscopic way, 8 patients combined with open surgery remove hardware and limited decompression without fusion and in additional two surgical procedure have been performed, 2 patient have fusion surgery because of recurrent spondylolisthesis after one level discectomy, 4 patient had extremely spinal stenosis, and hardware occupation, excessive decompression and posterior short fusion.

All patients be performed epiduroscopic treatment beside 4000-10000 IU Hylase injection immediate after surgery. During epiduroscopy procedure, such as epidural release with mechanic balloon and/or laser adhesiolysis performed.

Surgical Technique

Patient position must be properly pop up maximum pelvic posterior inclination with lumbar flexion 30 degrees, hip Flexion 45 degrees, knee and abdominal cushion support should be provided. Under local skin anesthesia and C Arm Xray image intensifier locating of hiatus sacral than insertion of 18 gauge needle. The guide wire must be screened on C-Arm radiography each step. After make sure guide wire intra channel position, to removal needle and deliver obturator on wire. Removal of the sheath obturator than take out of guide wire from channel. After removal obturator of working sheet to Insert of endoscope and make connection camera and other devices.

Results

Previous studies have used a measure of successful outcome $\geq 50\%$ of original pain relief as a successful outcome. Measure our study also included this point. The first VAS and Questionnaire score had been taken respectively high before surgery. These two scores (preoperative and postoperative) were then used to provide absolute difference more than 50 percent. We have no complications excepts mild headache, neckpain some cases. No hematoma, no infection, no retinal hemorrhage and no temporal blindness inspected. Our results suggest that although all ages have the potential to benefit from epiduroscopy and with or without interventional techniques. I highly encourage future research into the healing nature of our CSF to include an examination of its groundable electrical, conductive properties as well as an examination of any impact the earth's pulsatile electrical field may have on the pulsatile movement of CSF within our own brains.

Discussion

Combined to endoscopic diagnostic and treatment methods immediately or very soon. Spinal cord stimulation and Neuromodulations (permanently painfull) Treatment options for patients with chronic low back pain with a neuropathic and/or mixed neuropathic/nocioceptive pain component are often limited and unsatisfactory. Possible explanations proposed in the literature include neuroplasticity. Treatment strategies are varies in order distinguished main and satellite problems. It is difficult to identified or rectified main

problems (visible changes) like Instability. We strongly recommend visible skeletal problems that hardware failure, pseudoarthrosis must be resolved beside stenosis and impingement. Back pain is not satellite problem of radiculopathy. Muscle Atrophy and weakness would be associated epidural fibrosis and medullopthy. Faset arthropathy should be considered in the differential diagnosis and eliminated. Tricks first stage avoid to new iatrogenic injury that beginner surgeons should be trained by simulators. Lee JJ et al. designed a simulator for enhance to learning curve of epiduroscopy training skills [5-7]. Skilled surgeons intervention will be reduced to problem palliative treatment results instead of terminal treatment. Epiduroscopy protected massive surgical treatments, which is not enough to relieve failed back's pain. Main philosophy that avoid open surgical treatment and never lead to create a new generator for this cohort has often been discounted or has failed, leaving patients with few treatment options) Osteoporotic fractures must be treated with vertebroplasty. Vymazal et al. combined vertebra- lastly with epiduroscopy [8]. Combined to endoscopic diagnostic and treatment methods very useful especially persistent cases. We performed some cases transforaminal endoscopic procedures for neglected foramina stenosis. Avellanal et al. reported transforaminal epiduroscopic treatments and good results [4]. Spinal cord stimulation and Neuromodulations (permanently painfull) would be performed failed epiduroscopic results. Postoperative nausea or retinal problems have been reported. Suzuki et al. reported that use of dexmedetomidine during epiduroscopy procedures may reduce the required fentanyl dose during surgery and the incidence of postoperative nausea and vomiting [9].

Conclusion

Epiduroscopy is an option, which is significantly reduced pain in almost all patients with FBSS. Pain relief was significantly and highly correlated with reduced analgesic intake and patient satisfaction. Epiduroscopy should be considered as a potential treatment option for FBSS. It is not palliative treatment in which terminal stage of all other options.

Epiduroscopy has proven to be a safe, efficient and future-oriented interventional endoscopic procedure for everyday clinical use in diagnosing and managing pain syndromes. Epiduroscopy can be used in the sacral, lumbar, thoracic and even cervical regions of the spine to identify pathological structures, carry out tissue

biopsies and perform epidural pain provocation tests to assess the pain relevance of visualized anomalies, making it an excellent diagnostic tool. Spinal endoscopy allows targeted epidural analgesic pharmacologic therapy for affected nerve roots or other painful regions in the epidural space. Treatment options provided by epiduroscopy include laser-assisted adhesiolysis or resection of pain-generating fibrosis, catheter placement, as well as support with other invasive procedures for pain relief. Epiduroscopic management enhances a multimodal philosophy and opens up new treatment strategies for patients. If used early on, it can control pain well before chronicity sets in.

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