

PD-34. SPINAL EPIDUROSCOPIC EPIDUROPLASTY (SEE) IN THE TREATMENT OF FAILED BACK SURGERY SYNDROME

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Failed back surgery syndrome is not an uncommon problem with persistent back and leg pain.^{1,2} It is not clear whether the post-surgical scar is a primary contributor to cause pain; however, inflammation of lumbosacral epidural contents, including radiculitis, is considered to be a pathology.³ Epidural steroid injection to alleviate the inflammation and pain has been frequently unsuccessful due to epidural fibrosis and adhesion. A percutaneous epidural adhesiolysis technique by injecting a high volume of solution under epidurographic guidance and an epiduroscopic neuroplasty for the specific nerve root have been advocated with limited success.^{4,5} We performed a percutaneous spinal epiduroscopic epiduroplasty(SEE) to release the fibrosis and adhesion of the entire epidural and foraminal space with inflammation under direct visualization, so the injecting steroid can reach the inflamed area properly to treat persistent pain.

The medical records of twenty patients who had persistent back and leg pain after back surgeries were reviewed. All patients also failed to respond to conservative and interventional pain management, including multiple epidural injections, facet, sacroiliac and nerve root blocks, radiofrequency denervation, cryoanalgesia, psychology, or extended physiotherapy.

Each patient underwent caudal epiduroscopy using a percutaneous flexible endoscope to investigate the pathologic findings. Spinal epiduroscopic epiduroplasty(SEE) was performed to release the fibrosis mechanically using a catheter with steering tip under direct visualization. Entire epidural and foraminal space with inflammation and fibrosis was opened, and granulation and exudates were washed out thoroughly. Then epidural injection was made with lidocaine and deposteroid. Patients were followed up to six months and received additional epidural injections as deemed necessary. Data was collected for pain history and Verbal Analogue Scale (VAS) (0-10; 0 is no pain and 10 is the worst pain).

Nine males and eleven females with mean age of 49 (range of 28-70) were studied. Mean duration of pain was 8.1 years (range of 2-30). The patients had surgeries with mean of 2 (range 1-5). Thirteen patients used opioids over 1 year period. All patients had back and leg pain, and nine patients had leg pain bilaterally. MRI showed post-operative and degenerative changes in all patients, but no disk herniations were reported. Epiduroscopic findings showed extensive inflammation of the epidural contents with fibrotic tissue below the level of surgery in all patients, which was consistent with the distribution of pain. Pre-operative mean VAS was 8.0 +1.4(SD). Post-operative mean VAS at 1 month was 4.0+2.6, at 3 month was 3.0+2.2, and at 6 month was 2.6+2.1. Pain relief with VAS<4 was obtained within 1 month in 11 patients(55%), 3 months in 5 patients(25%) and 6 months in 2 patients(10%). Five patients reported complete pain relief. Two patients(10%) reported VAS>4 after 6 months; one patient with VAS 7 was referred to a neurosurgeon for spinal instability, and another patient with VAS 6 still reported good pain relief and was comfortable. Leg pain was completely relieved in all patients; five patients(25%) obtained pain relief within 1 week, 8 patients(40%) within 1 month, 6 patients(30%) within 3 months and 1 patient(5%) in 6 months. Mean epidural injection therapy after the SEE was 3.8 + 1.9(SD). Ten patients discontinued opioids and 3 patients reduced only to take prn doses. Complications included paresthesia of both legs in 1 patient and dural puncture in 2 patients, which all resolved without treatments.

Spinal epiduroscopic epiduroplasty(SEE) was performed in twenty failed back surgery syndrome patients. Following SEE and epidural steroid injections, 90% of back pain was improved and all leg pain was resolved within 6 months. This data shows SEE is a useful minimally invasive technique to treat persistent pain from epidural inflammation and fibrosis of failed back surgery syndrome.

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