

Incidental Durotomy In Endoscopic Spine Surgery: Must It Be Repaired?

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INTRODUCTION:

The incidental durotomy (ID) is any injury to dura leading to tear during spinal surgery. The incidence varies according to institution, ranging from 1% to 17%; 3.5% discectomy, 8.5% stenosis surgery, 13.2% revision[1]. However, the incidence of ID in Inter-laminar Endoscopic Lumbar Surgery (ILELS) is not well established. The purpose of this study is to review the incidence of ID in ILELS and management in our institution.

METHODS:

A retrospective review was conducted on cases, which underwent ILELS performed in our institution from September 2008 through December 2016.

RESULTS:

A total of 333 consecutive cases were reviewed: 237 were decompression for stenosis and 96 were discectomy for prolapsed disc. Of these cases, 19 were revision. ID occurred in 44 cases (13.21% overall incidence); 26 (59.09%) were decompression, 14 (31.82%) were discectomy and 4 (9.09%) were revision. We graded our tear into Grade 1, 2, 3 and 4, which were 20, 16, 6 and 2 cases respectively. No primary dural repair was done in all cases. 20 cases were left alone, 7 cases were plugged with muscle patch and all remaining 17 cases were applied with BioGlue®(*). All the cases had synthetic dural substitute applied and watertight dorsolumbar fascial closure. They were kept in bed for 24 hours and laxative was given for two weeks to avoid possible strain on the tear. No symptomatic pseudomeningocele and worsening of neurology were noted.

DISCUSSIONS:

Our overall incidence of ID is correlated with the reported incidence. In our series, we classified the dural tear into 4 grades: Grade 1: minimal leak, Grade 2: tear, Grade 3: tear with

prolapsed root/s, Grade 4: Dural defect-with prolapsed roots and loss of dural tissue. We also identified that large prolapsed disc, very tight stenosis and intraoperative uncontrolled bleeding as risk factors for ID. There is no strong evident from literature that the dural tear must be repaired. Most of the studies suggest for primary dural repair and, if not possible, for muscle patch with or without additional closure method[2]. However, dural closure methods do not influence re-operation rate[3]. We believe that it is not necessary for primary repair. Conservative treatment is adequate as most of the tear were relatively small; the coverage was achieved with artificial dural, with or without BioGlue®, and closure was supplemented with water-tight repair of thoracolumbar fascia.

CONCLUSION:

We conclude that the primary dural repair is not always necessary and conservative treatment is adequate.

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(*BioGlue® Surgical Adhesive is composed of bovine serum albumin and glutaraldehyde, a product of CryoLife.