Laminectomy

- Laminectomy with fusion for cervical spondylotic myelopathy is associated with higher early morbidity and risk of perioperative complications compared with laminectomy alone: a retrospective study in the United States
- A Second Look at the Use of VersaWrap® Nerve Protector in Spine Surgery: A Case Report
- Case 342
- Reoperation Rates After Lumbar Discectomy in Pediatric Patients
- Comparative biomechanical analysis of Endo-LOVE and C-endo LFD techniques for bi-segmental cervical spondylotic radiculopathy in normal and osteoporotic patients: a finite element study
- Massive Foramen Magnum Meningioma Mimicking a Stroke
- Percutaneous endoscopic lumbar partial laminectomy assisted by a new miniature parallel surgical robot system: a trial on a cadaveric specimen
- Simultaneous two-level minimally invasive lumbar laminectomy performed with dual tubular retractor systems in a 93-year-old under spinal anesthesia: illustrative case

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A laminectomy is a surgical procedure that removes a portion of the vertebral bone called the lamina. At its most minimally invasive, the procedure requires only small skin incisions. The back muscles are pushed aside rather than cut and the parts of the vertebra adjacent to the lamina are left intact. Recovery occurs within a few days.

Indications

A **laminectomy** is a surgical procedure involving removal of the lamina to relieve pressure on the spinal cord or nerve roots.

1. Spinal Cord Compression

- Trauma (fractures, hematoma) - Tumors (metastatic, intradural-extramedullary) - Epidural abscess

2. Degenerative Spine Diseases

- **Spinal stenosis** causing neurogenic claudication and radiculopathy - **Ossification of the posterior longitudinal ligament (OPLL)**

3. Disc Herniation

- Large or central herniations compressing spinal cord or cauda equina.

4. Spinal Tumors

- Intradural or extradural tumors causing mass effect.

5. Spinal Infections

- Epidural abscess requiring decompression and drainage.

6. Traumatic Spinal Injury

- Unstable fractures with neural compression. - Decompression after spinal fractures associated with neurologic deficits.

7. Chiari Malformation

- Posterior fossa decompression with C1 (± C2) laminectomy.

8. Adjunct to Stabilization Surgery

- Part of posterior approaches for fixation and fusion procedures.

Summary

Laminectomy is primarily indicated for **relieving neural element compression** caused by trauma, degeneration, tumors, infection, or congenital conditions. It may need to be combined with **stabilization** if spinal instability is present.

Laminectomy has normally been used as a standard approach for intradural spinal tumors but this procedure is associated with spinal instability and deformity. Laminoplasty was developed to overcome these limitations. Controversies still exist regarding its actual role in preventing spinal deformity in adults.

see Unilateral laminectomy

see Cervical laminectomy

see Lumbar laminectomy

Complications

Laminectomy complications

Case series

Laminectomy utilizing a high speed drill with an unprotected cutting drill bit can be rapid and effective, but it has been associated with known complications. Another technique utilizes a pediatric craniotome drill with the footplate attachment. Currently, there are no studies comparing clinical outcomes between these two stated decompressive techniques.

A retrospective review was conducted at a single institution. Two cohorts of patients were considered based on the technical method of laminectomy for decompression. One group had decompression with utilization of a high-speed drill while the other group had decompression with a pediatric craniotome drill with a footplate attachment. The outcomes from each group were compared based on the length of operation, estimated blood loss, and associated complications.

A total of 91 patients were included in the final analysis. Forty-five of the patients underwent laminectomy utilizing a footplate and forty-six utilizing a high-speed drill. The footplate group was associated with significantly shorter time of operation (159 minutes vs 205 minutes p=0.008). In addition, the footplate technique demonstrated less EBL (254 ml vs 349 ml), and less incidence of durotomies (2.2% vs 10.9%), however, neither of these two outcomes achieved statistical significance.

CONCLUSION: Despite being an older technique, the aforementioned cohort demonstrates shorter operative time in the footplate group without increased blood loss or incidence of durotomy. Although comparable results are operator dependent, this technique is a safe alternative for performing cervical and thoracic laminectomies [1].

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Elia C, Hariri OR, Duong J, Dong F, Sweiss R, Miulli D. Use of a pediatric craniotome drill for cervical and thoracic spine decompression: Safety and efficacy. World Neurosurg. 2018 Feb 17. pii: S1878-8750(18)30332-2. doi: 10.1016/j.wneu.2018.02.061. [Epub ahead of print] PubMed PMID: 29462736.