

Cerebrospinal fluid fistula after spine surgery

- [Spinal CSF leaks in spontaneous intracranial hypotension: A single-institution analysis of incidence, typology and treatment outcomes](#)
- [Extended Laminectomy in Chiari Malformation Treatment: A Systematic Review](#)
- [The Rapid Progression of Myelopathy Due to Cervical Epidural Fluid Collection From Metastatic Tumor in the Cervical Lamina: A Case Report](#)
- [Mild cognitive impairment in spontaneous intracranial hypotension and its rapid reversal by repair of a spinal cerebrospinal fluid leak](#)
- [Management of Subarachnoid-Pleural Fistula Following Anterior Transthoracic Approach for the Ossification of Posterior Longitudinal Ligament in the Thoracic Spine](#)
- [Iatrogenic intracranial hypotension secondary to subarachnoid-pleural fistula after transthoracic surgery for the treatment of lateral thoracic meningocele](#)
- [Use of Subfascial Passive Bile Bag Drainage for the Management of Durotomies in Spine Surgery](#)
- [Rotational Latissimus Dorsi Flap for Lateral Repair of Thoracic Cerebrospinal Fluid-Pleural Fistula: Case Report](#)

Postoperative [cerebrospinal fluid fistula](#) is a well-known complication in [spine surgery](#) that lead to a significant change in the length of hospitalization and possible [postoperative complications](#).

The causes of CSF fistula after spine surgery can include:

Accidental injury to the dura mater, which is the thin, delicate membrane that covers the spinal cord and brain. This can occur during surgery due to a variety of factors, including excessive traction, cutting, or tearing of the dura mater. Infection of the surgical site, which can weaken the dura mater and lead to a fistula. Degenerative changes in the spine, which can cause weakness or thinning of the dura mater. Symptoms of a CSF fistula after spine surgery may include:

Persistent headache that worsens when sitting or standing and improves when lying down. Drainage of clear fluid from the surgical site. Nausea, vomiting, and sensitivity to light. Neck stiffness or pain. Changes in vision or hearing. Treatment for a CSF fistula after spine surgery may include:

Observation and conservative management, such as [bed rest](#), hydration, and pain management. Surgical repair of the fistula may involve re-approximating the dura mater and/or using synthetic materials to close the fistula. Antibiotic treatment for infections that may be contributing to the fistula. Overall, CSF fistula after spine surgery is a rare but potentially serious complication that requires prompt recognition and treatment to prevent further complications and improve outcomes.

Treatment

see [Cerebrospinal fluid fistula treatment](#).

see [External lumbar cerebrospinal fluid drainage for cerebrospinal fluid fistula](#).

In a review, Fang et al. compared the effects of different dural closure techniques, and introduce the latest treatment methods and mechanisms ¹⁾.

Bed rest for cerebrospinal fluid fistula prevention after spine surgery

- [Is lumbar drainage of postoperative cerebrospinal fluid fistula after spine surgery effective?](#)
 - [Effect of fibrin glue on the prevention of persistent cerebral spinal fluid leakage after incidental durotomy during lumbar spinal surgery](#)
 - [Postoperative management of incidental durotomy in minimally invasive lumbar spinal surgery](#)
 - [Surgical management of dural injuries and postoperative cerebrospinal fluid fistulas in spinal surgeries](#)
-

For Hohenberger et al. bed rest and laxative treatment were important approaches to preventing CSF fistula ²⁾.

For Verma et al. Flatbed rest > 24 hours following incidental durotomy was associated with increased length of stay and increased rate of medical complications. After primary repair of an incidental durotomy, flatbed rest may not be necessary and appears to be associated with higher costs and complications ³⁾.

To assess whether prolonged bed rest may lower the risk of CSFL. Krahwinkel et al. from the [Münster University Hospital](#) performed a retrospective [cohort study](#) including patients with [intradural](#) pathologies who underwent surgery between 2013 and 2021. [Cohorts](#) included patients who completed 3 days of postoperative [bed rest](#) and patients who were mobilized earlier. The primary [endpoint](#) was the occurrence of clinically proven CSFL.

Four hundred and thirty-three patients were included (female [51.7%], male [48.3%]) with a mean age of 48 years (SD ±20). Bed rest was ordered in 315 cases (72.7%). In 7 cases (N = 7/433, 1.6%), they identified a postoperative CSFL. Four of them (N = 4/118) did not preserve bed rest, showing no significant difference to the bed rest cohort (N = 3/315; P = .091). In univariate analysis, laminectomy (N = 4/61; odds ratio [OR] 8.632, 95% CI 1.883-39.573), expansion duraplasty (N = 6/70; OR 33.938, 95% CI 4.019-286.615), and recurrent surgery (N = 5/66; OR 14.959, 95% CI 2.838-78.838) were significant risk factors for developing CSFL. In multivariate analysis, expansion duraplasty was confirmed as an independent risk factor (OR 33.937, 95% CI 4.018-286.615, P = .001). In addition, patients with CSFL had a significantly higher risk for [meningitis](#) (N = 3/7; 42.8%, P = .001).

Prolonged bed rest did not protect patients from developing CSFL after surgery on intradural pathologies. Avoiding [laminectomy](#), large voids, and minimally invasive approaches may play a role in preventing CSFL. Furthermore, special caution is indicated if expansion [duraplasty](#) was done ⁴⁾.

1)

Fang Z, Tian R, Jia YT, Xu TT, Liu Y. Treatment of cerebrospinal fluid leak after spine surgery. Chin J Traumatol. 2017 Apr;20(2):81-83. doi: 10.1016/j.cjtee.2016.12.002. Epub 2017 Feb 24. PMID: 28336418; PMCID: PMC5392710.

2)

Hohenberger C, Brawanski A, Bründl E, Ullrich OW, Zeman F, Schebesch KM. Development of cerebrospinal fluid fistula after incidental durotomy in spinal decompression surgery. J Neurosurg Sci. 2022 Apr;66(2):96-102. doi: 10.23736/S0390-5616.19.04721-0. Epub 2019 Oct 28. PMID: 31680503.

3)

Verma K, Freelin AH, Atkinson KA, Graham RS, Broaddus WC. Early mobilization versus bed rest for incidental durotomy: an institutional cohort study. J Neurosurg Spine. 2022 Mar 18:1-6. doi: 10.3171/2022.1.SPINE211208. Epub ahead of print. PMID: 35303709.

4)

Krahwinkel S, Schipmann S, Spille D, Maragno E, Al Barim B, Warneke N, Stummer W, Gallus M, Schwake M. The Role of Prolonged Bed Rest in Postoperative Cerebrospinal Fluid Leakage After Surgery of Intradural Pathology-A Retrospective Cohort Study. Neurosurgery. 2023 Mar 8. doi: 10.1227/neu.0000000000002448. Epub ahead of print. PMID: 36883822.

From:

<https://neurosurgerywiki.com/wiki/> - **Neurosurgery Wiki**

Permanent link:

https://neurosurgerywiki.com/wiki/doku.php?id=cerebrospinal_fluid_fistula_after_spine_surgeryLast update: **2024/06/07 02:49**