

Traumatic cerebrospinal fluid rhinorrhea

Posttraumatic [cerebrospinal fluid leakage](#) frequently complicates [skull base fractures](#).

Epidemiology

Notably, 80% of cerebrospinal fluid (CSF) leaks result from [skull base fractures](#) following head trauma. The relationship between closed head injury with basilar skull fractures and the formation of CSF leaks ranges from 2% to 30%. Meningitis occurs in 25-50% of untreated traumatic CSF fistulas and in 10% of patients in the first week after trauma with head injury ^{1) 2) 3) 4) 5)}.

Spinal surgery

see [accidental durotomy](#)

[Cerebrospinal fluid leakage](#) usually occurs within 48 hours after injury and only 5% of cases show delayed onset of cerebrospinal fluid rhinorrhea, which occurs more than 3 months after head injury ⁶⁾.

A total of 27 cases of CSF leakage occurred among 1036 cases of closed head injury ⁷⁾.

In the report of Kamochi et al. , 85% of the 27 cases were CSF rhinorrhea, and 11% were CSF otorrhea ⁸⁾.

Furthermore, 51 patients had CSF leakage that occurred 24 hours or more after injury, of which 43% were rhinorrhea and 33% were otorrhea

Treatment

see [Cerebrospinal fluid fistula treatment](#).

Case series

2016

The objective of a study is to present our experience in management of traumatic CSF leaks using the endoscopic multilayer repair technique. Forty-two patients (aged 10-75 years, 30 males and 12 females) presenting with confirmed post-traumatic CSF rhinorrhea were operated upon between January 2007 and December 2013. The endoscopic multilayer technique was used in all cases. Electromagnetic navigation was used in some cases. All cases presented with intermittent watery rhinorrhea. The duration of the rhinorrhea ranged from 3 days to 1 year before repair. One case presented after 10 years from the causative trauma. Ten cases had a history of meningitis. Nine cases had more than one defect. Iatrogenic defects were larger than defects following accidental trauma. Two cases, following RTA, developed pseudo-aneurysm of internal carotid artery. Ten cases had associated pneumocephalus. The mean duration of postoperative hospitalization was 6 days (range

4-8 days). The mean follow-up duration was 31.2 +/- 11.4 months (range 16-48 months). None of our patient developed serious intra- or postoperative complications. Only one case required another surgery to repair a missed second defect. Post-traumatic CSF leaks can be successfully managed via the endonasal endoscopic route using the multilayer repair technique. It is important to look for multiple defects in these cases. CT angiography is recommended for traumatic leaks involving the lateral wall of the sphenoid sinus to diagnose or exclude the development of pseudo-aneurysm of the internal carotid artery ⁹⁾.

1)

Buchanan R, Brant A, Marshall L. Traumatic Cerebrospinal Fluid Fistulas. In: H. Richard Winn, editor. Neurological Surgery. Saunders; 5th edition, 2003; p.5265-70

2)

Friedman JA, Ebersold MJ, Quast LM. Persistent posttraumatic cerebrospinal fluid leakage. Neurosurg Focus 2000; 9:1.

3)

Choi D, Spann R. Traumatic cerebrospinal fluid leakage: risk factors and the use of prophylactic antibiotics. Brit J Neurosurg 1996; 10: Issue. 6: 571-576

4)

Welch KC. CSF Rhinorrhea: eMedicine 2006. Retrieved from: <http://emedicine.medscape.com/article/861126>- overview.

5)

Hanson MB. CSF Otorrhea: eMedicine 2006. Retrieved from: <http://emedicine.medscape.com/article/883160>- overview

6)

Lewin W: Cerebrospinal fluid rhinorrhea in closed head injuries. Br J Surg 42: 1-18, 1954

7)

Bernal-Sprekelsen M, Bleda-Vaázquez C, Carrau RL: Ascending meningitis secondary to traumatic cerebrospinal fluid leaks. Am J Rhinol 14: 257-259, 2000

8)

Kamochi H, Kusaka G, Ishikawa M, Ishikawa S, Tanaka Y. Late onset cerebrospinal fluid leakage associated with past head injury. Neurol Med Chir (Tokyo). 2013;53(4):217-20. PubMed PMID: 23615410.

9)

Ibrahim AA, Okasha M, Elwany S. Endoscopic endonasal multilayer repair of traumatic CSF rhinorrhea. Eur Arch Otorhinolaryngol. 2016 Apr;273(4):921-6. doi: 10.1007/s00405-015-3681-y. Epub 2015 Jun 6. PubMed PMID: 26048356.

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