

Cerebellar hemorrhage surgery indications

- [European Stroke Organisation \(ESO\) and European Association of Neurosurgical Societies \(EANS\) guideline on stroke due to spontaneous intracerebral haemorrhage](#)
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- [Comparison Between the Supracerebellar Infratentorial and Precuneal Interhemispheric, Transtentorial Approaches to the Cerebellomesencephalic Fissure: An Anatomoradiological Study and Illustrative Cases](#)
- [Clinical Efficacy of Endoscopic Infratentorial Supracerebellar Approach for Pineal Region Tumors: A Retrospective Case-Control Study](#)

French Society of Neurosurgery (SFNC) and the French Society of Vascular Neurology (SFNV)

The writing committee comprised 9 members of the SFNV and the SFNC. Recommendations were established based on a literature review using the PICO questions. The American Heart Association (AHA) classification was used to define recommendation level. In case of insufficient evidence, expert opinions were provided.

Levels of evidence were low to moderate, precluding definitive recommendations. Based on available data, surgical hematoma evacuation is not recommended to improve functional outcome (Class III; Level B NR). However, based on subgroup analysis, surgical evacuation may be considered in strictly selected patients (Class IIb; Level C-EO): hematoma volume 15-25 cm³, GCS 6-10, and no oral anticoagulation or antiplatelet therapy. Moreover, surgical evacuation is recommended to decrease risk of death (Class IIa; Level B NR) in patients with a hematoma volume >15 cm³ and GCS score <10.

These guidelines were based on observational studies, limiting the level of evidence. However, except for strictly selected patients, surgical evacuation of cerebellar ICH was not associated with improved functional outcome, limiting indications. Data from RCTs are needed in this field ¹⁾

In 2014, the European Stroke Organization (ESO) stated that “There is insufficient evidence from randomized control trials (RCT) to make strong recommendations about how, when, and for whom surgical evacuation should be performed in adults with cerebellar ICH (quality of evidence: low, strength of recommendation: weak)” ²⁾

Surgical treatment of cerebellar ICH can be life-saving but often leads to a poor [functional outcome](#). New studies are needed on long-term functional outcome after a cerebellar ICH ³⁾.

Since the 1970s, there has been a wide mutual consensus in the neurological and neurosurgical community that cerebellar ICHs should be operated on. However, the scientific proof is mainly based on small retrospective series with conflicting results ⁴⁾.

To relieve [brainstem compression](#) and [hydrocephalus](#), surgeons tend to favor [occipital craniectomy](#) or [occipital craniotomy](#) with hematoma evacuation in patients with a declining level of consciousness ⁵⁾. Some regard this counterintuitive as long-term outcomes after surgical treatment of cerebellar ICH are generally pessimistic ⁶⁾.

Since the report by Little et al., ⁷⁾ the hematoma diameter has been considered a significant factor in the decision-making process for optimal treatment.

The criteria for surgery remain controversial, and many researchers have determined that a hematoma larger than 3 cm, obstruction of the [quadrigeminal cistern](#), and compression of the [fourth ventricle](#) are surgical criteria ^{8) 9) 10)}.

Cohen et al. ¹¹⁾ used a maximal hematoma diameter greater than 3 cm as the surgical criterion, however, some patients with a hematoma larger than 3 cm who underwent conservative treatment had a good prognosis as well. In addition, a hematoma volume greater than 15 mL, being equivalent with a hematoma with a maximal diameter greater than 3 cm, has also been used as a criterion in some cases ¹²⁾.

The criteria of Kobayashi et al., are as follows:

- 1) patients with [Glasgow Coma Scale](#) scores of 14 or 15 and with a [hematoma](#) of less than 40 mm in maximum diameter are treated conservatively
- 2) for the patients with Glasgow Coma Scale scores of 13 or less at admission or with a hematoma measuring 40 mm or more, hematoma evacuation with decompressive [suboccipital craniectomy](#) should be a treatment of choice
- 3) for the patient whose brain stem reflexes are entirely lost with flaccid tetraplegia or whose general condition is poor, intensive therapy is not indicated. The validity of these criteria was tested and confirmed in 49 cases ¹³⁾.

¹⁾

Metayer T, Pasi M, Magro E, Lejeune JP, Thines L, Sibon I, Touze E, Cordonnier C, Gaberel T. Indications for surgical evacuation of cerebellar intracerebral hemorrhage: consensus guidelines from the French Society of Neurosurgery (SFNC) and the French Society of Vascular Neurology (SFNV). *Neurochirurgie*. 2024 Jan;70(1):101506. doi: 10.1016/j.neuchi.2023.101506. Epub 2023 Nov 4. PMID:

37925776.

2)

Steiner T, Al-Shahi Salman R, Beer R, Christensen H, Cordonnier C, Csiba L, Forsting M, Harnof S, Klijn CJ, Krieger D, Mendelow AD, Molina C, Montaner J, Overgaard K, Petersson J, Roine RO, Schmutzhard E, Schwerdtfeger K, Stapf C, Tatlisumak T, Thomas BM, Toni D, Unterberg A, Wagner M; European Stroke Organisation. European Stroke Organisation (ESO) guidelines for the management of spontaneous intracerebral hemorrhage. *Int J Stroke*. 2014 Oct;9(7):840-55. doi: 10.1111/ijss.12309. Epub 2014 Aug 24. PMID: 25156220.

3)

Satopää J, Meretoja A, Koivunen RJ, Mustanoja S, Putaala J, Kaste M, Strbian D, Tatlisumak T, Niemelä MR. Treatment of intracerebellar haemorrhage: Poor outcome and high long-term mortality. *Surg Neurol Int*. 2017 Nov 9;8:272. doi: 10.4103/sni.sni_168_17. eCollection 2017. PubMed PMID: 29204307; PubMed Central PMCID: PMC5691556.

4)

Witsch J, Neugebauer H, Zweckberger K, Jüttler E. Primary cerebellar haemorrhage: complications, treatment and outcome. *Clin Neurol Neurosurg*. 2013 Jul;115(7):863-9. doi: 10.1016/j.clineuro.2013.04.009. Epub 2013 May 6. Review. PubMed PMID: 23659765.

5)

Wijdicks EF, St Louis EK, Atkinson JD, Li H. Clinician's biases toward surgery in cerebellar hematomas: an analysis of decision-making in 94 patients. *Cerebrovasc Dis*. 2000 Mar-Apr;10(2):93-6. PubMed PMID: 10686446.

6)

Luney MS, English SW, Longworth A, Simpson J, Gudibande S, Matta B, Burnstein RM, Veenith T. Acute Posterior Cranial Fossa Hemorrhage-Is Surgical Decompression Better than Expectant Medical Management? *Neurocrit Care*. 2016 Dec;25(3):365-370. PubMed PMID: 27071924; PubMed Central PMCID: PMC5138260.

7)

Little JR, Tubman DE, Ethier R. Cerebellar hemorrhage in adults. Diagnosis by computerized tomography. *J Neurosurg*. 1978 Apr;48(4):575-9. PubMed PMID: 632882.

8) 11)

Cohen ZR, Ram Z, Knoller N, Peles E, Hadani M. Management and outcome of non-traumatic cerebellar haemorrhage. *Cerebrovasc Dis*. 2002;14(3-4):207-13. PubMed PMID: 12403953.

9)

Kirollos RW, Tyagi AK, Ross SA, van Hille PT, Marks PV. Management of spontaneous cerebellar hematomas: a prospective treatment protocol. *Neurosurgery*. 2001 Dec;49(6):1378-86; discussion 1386-7. PubMed PMID: 11846937.

10)

Salvati M, Cervoni L, Raco A, Delfini R. Spontaneous cerebellar hemorrhage: clinical remarks on 50 cases. *Surg Neurol*. 2001 Mar;55(3):156-61; discussion 161. PubMed PMID: 11311913.

12)

Cho SM, Hu C, Pyen JS, Whang K, Kim HJ, Han YP, et al. Predictors of outcome of spontaneous cerebellar hemorrhage. *J Korean Neurosurg Soc*. 1997 Oct;26(10):1395-1400.

13)

Kobayashi S, Sato A, Kageyama Y, Nakamura H, Watanabe Y, Yamaura A. Treatment of hypertensive cerebellar hemorrhage-surgical or conservative management? *Neurosurgery*. 1994 Feb;34(2):246-50; discussion 250-1. PubMed PMID: 8177384.

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