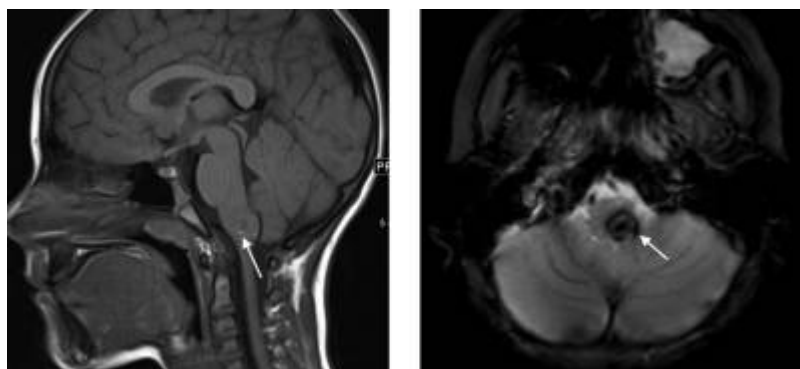


Medulla Oblongata Cavernous Malformation



see also [Brainstem cavernous malformation](#).

Videos

[Medulla oblongata cavernoma removal through a lazy far lateral approach](#)

Case series

A study of Xie et al., from the Department of Neurosurgery, [Beijing](#) Tiantan Hospital, Capital Medical University, [China](#), consisted of 69 patients. Preoperatively, nine patients (13.0%) had complaints of [dyspnea](#), and 4 of the patients (5.8%) had [hypoxemia](#). Postoperatively, eleven patients (15.9%) had bad respiratory statuses, including postoperative respiratory dysfunction (RDF) as a respiratory rhythm disorder and/or dyspnea in 6 patients, and ≥ 7 days of [cough reflex](#) (CR) deficits in 5 patients. With a mean follow-up duration of 35.3 months, the patient neurological status improved in 45 cases (68.2%), remained unchanged in 11 cases (16.7%), and worsened in 10 cases (15.1%) relative to the preoperative baseline. A multivariate logistic regression analysis identified that the independent adverse factors of bad postoperative respiratory status were multiple preoperative hemorrhages, large lesion size, and surgical intervention during the chronic period (> 8 weeks).

Postoperative RDF and CR deficits could commonly occur in patients with CMs involving the medulla oblongata. However, patients with less preoperative hemorrhages, small lesion size, and operation within 8 weeks of the last bleeding are prone to be associated with a reduced possibility of bad postoperative respiratory status ¹⁾.

53 patients underwent surgical treatment for [Medulla Oblongata Cavernous Malformations](#) between 2011 and 2017 in the [Beijing Tiantan Hospital](#) with a [male-to-female](#) ratio of 1.4 and a mean age of 32.6 years. Eighteen patients (34.0%) had [respiratory failure](#), and two patients (3.8%) had cardiac instabilities, preoperatively. The mean mRS score was 2.7 upon admission. [Gross total resection](#) was achieved in 52 patients (98.1%). Postoperatively, twenty-three patients (43.4%) had respiratory dysfunction, and sixteen patients (30.2%) had [dysphagia](#) or [coughing](#). The mean follow-up duration was 35.7 months. At the last follow-up evaluation, the mean mRS score was 1.7, and 42 patients

(84%) had favorable outcomes, with mRS scores ≤ 2 . The conditions of the patients improved in 34 cases (68%), remained unchanged in 10 cases (20%), and worsened in 6 cases (12%) relative to the preoperative baseline. The independent **adverse** factors for long-term outcome were age ≥ 50 years old and increased time of reservation of tracheal **intubation** after surgery.

Surgical treatment of CMs involving the medulla oblongata was very challenging, notably, perioperative respiratory dysfunction, with which patients tend to have unfavorable long-term outcomes, especially for **elderly** patients ²⁾.

A 28-year-old man who was presented with intractable hiccup for 15 days. It developed suddenly, then aggravated progressively and did not respond to any types of medication. On magnetic resonance images, a well-demarcated and non-enhancing mass with hemorrhagic changes was noted in the left medulla oblongata. Intraoperative findings showed that the lesion was fully embedded within the brain stem and pathology confirmed the diagnosis of cavernous hemangioma. The hiccup resolved completely after the operation. Based on the presumption that the medullary cavernoma may trigger intractable hiccup by displacing or compression the hiccup arc of the dorsolateral medulla, surgical excision can eliminate the symptoms, even in the case totally buried in brainstem ³⁾.

A 61-year-old woman presented with vertigo and swallowing disturbance. T1-weighted magnetic resonance image (MRI) showed a low intensity mass in the dorsolateral portion of the medulla oblongata, and T2-weighted imaging revealed a hemosiderin rim surrounding the lesion. Angiography showed no abnormalities. Surgery using far lateral approach achieved complete removal of the mass and hematoma. Histological examination of the surgical specimen disclosed cavernous angioma. This case suggests that direct surgery can be recommended for cavernous angioma located in the dorsal or lateral medulla oblongata to remove the hematoma and angioma if bleeding clearly provokes neurological symptoms ⁴⁾.

¹⁾

Xie MG, Xiao XR, Li D, Guo FZ, Zhang JT, Wu Z, Zhang LW. Surgical Management and Risk Factors of Postoperative Respiratory Dysfunction of Cavernous Malformations Involving the Medulla Oblongata. *World Neurosurg.* 2018 Jul 20. pii: S1878-8750(18)31587-0. doi: 10.1016/j.wneu.2018.07.109. [Epub ahead of print] PubMed PMID: 30036714.

²⁾

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³⁾

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⁴⁾

Abe M, Ogawa A, Yoshida Y, Hidaka T, Suzuki M, Takahashi S. Surgical removal of cavernous angioma in the medulla oblongata. A case report. *Neurosurg Rev.* 1997;20(2):128-31. Review. PubMed PMID: 9226673.

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