

# Cerebellar medulloblastoma

Cerebellar [medulloblastoma](#) is the second most common [posterior fossa tumor](#) in children.

It accounts for 40% of [posterior fossa tumors](#) in the pediatric age group <sup>1)</sup>.

[Medulloblastoma](#) of the [cerebellum](#) arises from the [vermis](#).

## Clinical features

The clinical presentation of this malignant tumor is usually related to the posterior fossa tumor mass effect and/or [obstructive hydrocephalus](#).

The usual presenting symptoms of medulloblastoma are [headache](#), [vomiting](#) and [ataxia](#) <sup>2) 3)</sup>.

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The [posterior fossa syndrome](#) (PFS) is a serious complication faced by neurosurgeons and their patients, especially in pediatric [medulloblastoma](#) patients.

## Case reports

A report detailed four cases of tumor recurrence in the subfrontal region after cerebellar medulloblastoma resection without local relapse and explored the causes of recurrence. In addition, a case-based update and insight into the entity is attempted.

All four patients received cerebellar medulloblastoma resection and postoperative radiotherapy. They were admitted to our hospital when they were found to have a recurrent tumor in the subfrontal region of the anterior skull base. All four patients received re-resection of the tumor, which was confirmed to be recurrent medulloblastoma by postoperative pathological results.

All patients received local radiotherapy and temozolomide chemotherapy after recurrent tumor resection. They all died due to multiple organ failure resulting from tumor metastasis to other sites or tumor regrowth within 2 years after the second operation.

Medulloblastoma metastasize to the subfrontal region and develop a homogenous recurrence is rare. Underdosage of radiation, a gravity-related sanctuary effect, surgical position, and perioperative hydrocephalus management might be factors contributing to this supratentorial meningeal recurrence. A better prevention of tumor recurrence might be achieved by extensive microsurgical tumor resection in the initial operation and by minimizing the need for a permanent V-P shunt in the treatment of perioperative hydrocephalus as well as by administering full-dose radiotherapy to the region of the cribriform plate in the subfrontal area <sup>4)</sup>.

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A patient who underwent subtotal resection of posterior fossa medulloblastoma with subsequent chemotherapy and radiotherapy at the age of 10 years. A new lesion in the region of the left foramen

of Monro appeared 16 years later. Based on the imaging results, metastasis or radiation-induced cavernoma was considered. The lesion had the same appearance on imaging as a rarely published intraventricular cavernoma of the foramen of Monro. Unlike the cavernoma of the foramen of Monro, this lesion was subependymal and intraforniceal. Using electromagnetic navigation and neuroendoscopy, the lesion was completely removed. Histopathological examination revealed a cavernous haemangioma.

This is a unique case of [intraforniceal paraforaminal cavernoma](#) that was successfully removed endoscopically using electromagnetic neuronavigation and without neurological sequelae.<sup>5)</sup>

1)

Allen JC. Childhood brain tumors: current status of clinical trials in newly diagnosed and recurrent disease. *Pediatr Clin North Am.* 1985;32:633-651.

2)

Park TS, Hoffman HJ, Hendrick EB, Humphreys RP, Becker LE. Medulloblastoma: clinical presentation and management. Experience at the hospital for sick children, Toronto, 1950-1980. *J Neurosurg.* 1983;58:543-552. doi: 10.3171/jns.1983.58.4.0543.

3)

Meyers SP, Wildenhain SL, Chang JK, Bourekas EC, Beattie PF, Korones DN, Davis D, Pollack IF, Zimmerman RA. Postoperative evaluation for disseminated medulloblastoma involving the spine: contrast-enhanced MR findings, CSF cytologic analysis, timing of disease occurrence, and patient outcomes. *AJNR Am J Neuroradiol.* 2000;21:1757-1765.

4)

Yue H, Ling W, Yibo O, Sheng W, Sicheng T, Jincan C, Dongsheng G. Subfrontal recurrence after cerebellar medulloblastoma resection without local relapse: case-based update. *Childs Nerv Syst.* 2018 Jun 23. doi: 10.1007/s00381-018-3869-8. [Epub ahead of print] PubMed PMID: 29934705.

5)

Liby P, Zamecnik J, Kyncl M, Zackova J, Tichy M. Electromagnetic navigation-guided neuroendoscopic removal of radiation-induced intraforniceal cavernoma as a late complication of medulloblastoma treatment. *Childs Nerv Syst.* 2017 Jul 8. doi: 10.1007/s00381-017-3519-6. [Epub ahead of print] PubMed PMID: 28689346.

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