

Falx meningioma treatment

The inferior portion of the [falx meningioma](#) may adhere to branches of the [anterior cerebral artery](#). Middle or posterior third tumors are exposed using a [horseshoe incision](#) based in the direction of the major scalp feeding vessels. The patient may be placed in a [lateral position](#), or the [sitting position](#) may be used with [Doppler](#) monitoring for [air embolism](#). Anterior third tumors are approached using a [bicoronal](#) skin incision with the patient supine. For tumors that cross the midline, burr holes are placed to straddle the SSS. For managing superior sagittal sinus involvement.

Since these tumors are often debulked from the inside, removal tends to be bloodier than meningiomas that can be removed in 1 piece. The ability to embolize these tumors pre-op is somewhat limited but may be an adjunct.

Technique: Cut through tumor leaving a thin layer on dura. Then remove the now relatively avascular part that impresses the brain. Then make an incision through the dura near the tumor; it tends to be bloody, but once you have control of both sides of the dura you can begin to excise the dura around the tumor (you may need to leave a cuff on SSS if it is involved).

[Occipital craniotomy](#) for posterior third

The pure falcine meningiomas (without relation with cortical surface and superior sagittal sinus) and parasagittal falcine meningiomas may arise at any point along the midline, anterior to posterior, and present different technical problems depending on their location and depth.

Cushing and Eisenhardt used a transcortical incision to expose most falcine meningiomas. However, current microsurgical techniques and methods have improved intracranial compliance, including cerebrospinal fluid drainage, mannitolization, and hyperventilation, and a transcortical approach is rarely required ¹⁾.

The dura is opened to 1 to 2 cm from the midline, with the exposure planned in relation to the cortical veins draining to the sagittal sinus. Arachnoid and pachionian granulation attachments are divided. It is only necessary to retract the medial cerebral cortex 1 to 2 cm from the falx to expose the tumor. In some cases a bridging vein can be freed from the cortex for a few millimeters to give the required exposure without sacrificing the vein. A selfretaining retractor is placed. In the anterior third it is usually possible to take the draining veins and the sagittal sinus if necessary to complete the resection.

The key to the operation is to carry out an extensive internal decompression of the tumor with the [ultrasonic aspirator](#) and gradually draw the capsule into the area of decompression. Sometimes the tumor is transected parallel to the falx so the capsule can be more easily mobilized. In some patients a bilateral exposure is required. At some point in the operation, depending on the size and configuration of the tumor, the falx is divided well away from the tumor attachment. The [inferior sagittal sinus](#) can be occluded. Great care must be taken not to injure the pericallosal and callosomarginal arteries.

Spektor et al described a purely endoscopic removal of an atypical [parasagittal meningioma](#) in a patient who could not undergo standard craniotomy due to severe scalp atrophy following childhood irradiation for tinea capitis ²⁾.

For treating a patient with multiple falcine and parasagittal lesions, Yamaguchi et al. believe that it is beneficial to resect the maximum possible number of lesions during one operation, even if some lesions are asymptomatic. This practice can potentially reduce the total number of operations during a patient's lifetime ³⁾.

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Chung SB, Kim CY, Park CK, Kim DG, Jung HW. Falx meningiomas: surgical results and lessons learned from 68 cases. J Korean Neurosurg Soc. 2007 Oct;42(4):276-80. doi: 10.3340/jkns.2007.42.4.276. Epub 2007 Oct 20. PubMed PMID: 19096556; PubMed Central PMCID: PMC2588203.

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Spektor S, Margolin E, Eliashar R, Moscovici S. Purely endoscopic removal of a parasagittal/falx meningioma. Acta Neurochir (Wien). 2016 Mar;158(3):451-6. doi: 10.1007/s00701-015-2689-9. Epub 2016 Jan 8. PubMed PMID: 26746827.

³⁾

Yamaguchi J, Watanabe T, Nagatani T. Endoscopic approach via the interhemispheric fissure: the role of an endoscope in a surgical case of multiple falcine lesions. Acta Neurochir (Wien). 2017 Jul;159(7):1243-1246. doi: 10.1007/s00701-017-3129-9. Epub 2017 Mar 11. PubMed PMID: 28283869.

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Last update: **2024/06/07 02:59**

