# **Cavernous sinus meningioma surgery**

The type of craniotomy and complementary osteotomy and the usefulness of an extradural anterior clinoidectomy with unroofing the optic canal can be decided from preoperative neuroimaging.

#### see Pterional approach

see Orbitozygomatic approach. The advantage from exposure with an Orbitozygomatic craniotomy was noted for the central skull base tumors that had a more superior extension and/or occupied the floor of the middle fossa (MF). Furthermore, for some skull base meningiomas, a cranial base approach allowed identification and interruption of the anastomotic connection of ECA-ICA from which they derive their blood supply <sup>1)</sup>.

Data collected also help in determining whether extensive exposure of the middle cranial fossa is necessary to ensure substantial devascularization of the tumor and whether proximal control of the internal carotid artery (ICA) at its intrapetrosal portion might be useful. Study of the capacity of blood supply of the Willis circle is wise for deciding the need and way of performing an extra-intracranial bypass together with tumor removal. Currently the concept of operating only the tumors with extracavernous extensions and to limit resection to only their extracavernous portions is the most accepted way of treating these tumors.

It was that strategy that was adopted in the Sindou et al. 220-patient series. Radiosurgery or stereotactic fractionated radiotherapy may complement surgery or can be only reserved for growing remnants  $^{2)}$ .

## **Extent of Resection**

see Kobayashi tumor removal grading system.

### **Preoperative embolization**

In eight procedures in seven patients of this type, the tumor was embolized with 100% ethyl alcohol by temporarily occluding the ICA above the feeders while infusing ethanol with a microcatheter as close to the feeders as possible. At fluoroscopy, tumor blush was seen to have decreased markedly in all cases. In one patient, no obvious benefit was gained at surgery. In another patient, a first surgery that was aborted due to blood loss was successfully completed after embolization. The other five patients had much drier surgical fields than expected <sup>3)</sup>.

### Resectability

Tumors invading the walls of intracavernous ICA have frequently limited the potential for gross-total resection. Any degree of ICA encasement significantly influenced a tumor's resectability.

Meningiomas invading the CS often lose the natural arachnoid and medial intradural plane of dissection.

Tumor consistency plays an important role when dissecting the tumor from the neurovascular structures in the parasellar compartment.

Tumors that have a more fibrotic component or exhibit invasive histopathological features are difficult to dissect from the CNs and ICA, often necessitating intentional subtotal removal of the tumor to allow for maximal functional preservation of the CNs.

Reoperations for treatment of CSM following previous resection or SRS may account for difficulty in resection due to loss of anatomical planes or a possible change in tumor consistency following SRS <sup>4</sup>.

#### 1) 4)

Nanda A, Thakur JD, Sonig A, Missios S. Microsurgical resectability, outcomes, and tumor control in meningiomas occupying the cavernous sinus. J Neurosurg. 2016 Jan 8:1-15. [Epub ahead of print] PubMed PMID: 26745483.

Sindou M, Nebbal M, Guclu B. Cavernous sinus meningiomas: imaging and surgical strategy. Adv Tech Stand Neurosurg. 2015;42:103-21. doi: 10.1007/978-3-319-09066-5\_6. Review. PubMed PMID: 25411147.

Jungreis CA. Skull-base tumors: ethanol embolization of the cavernous carotid artery. Radiology. 1991 Dec;181(3):741-3. PubMed PMID: 1947090.

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