



# Microscopic and Endoscopic Combined Resection of Recurrent Left Cavernous Sinus Meningioma



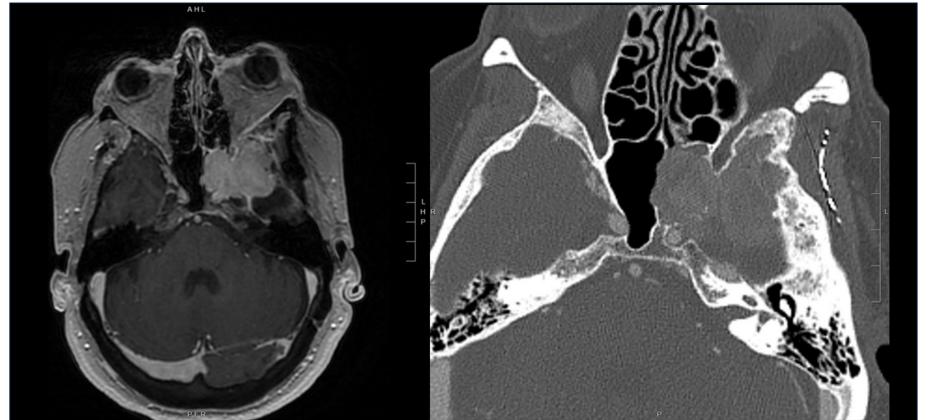
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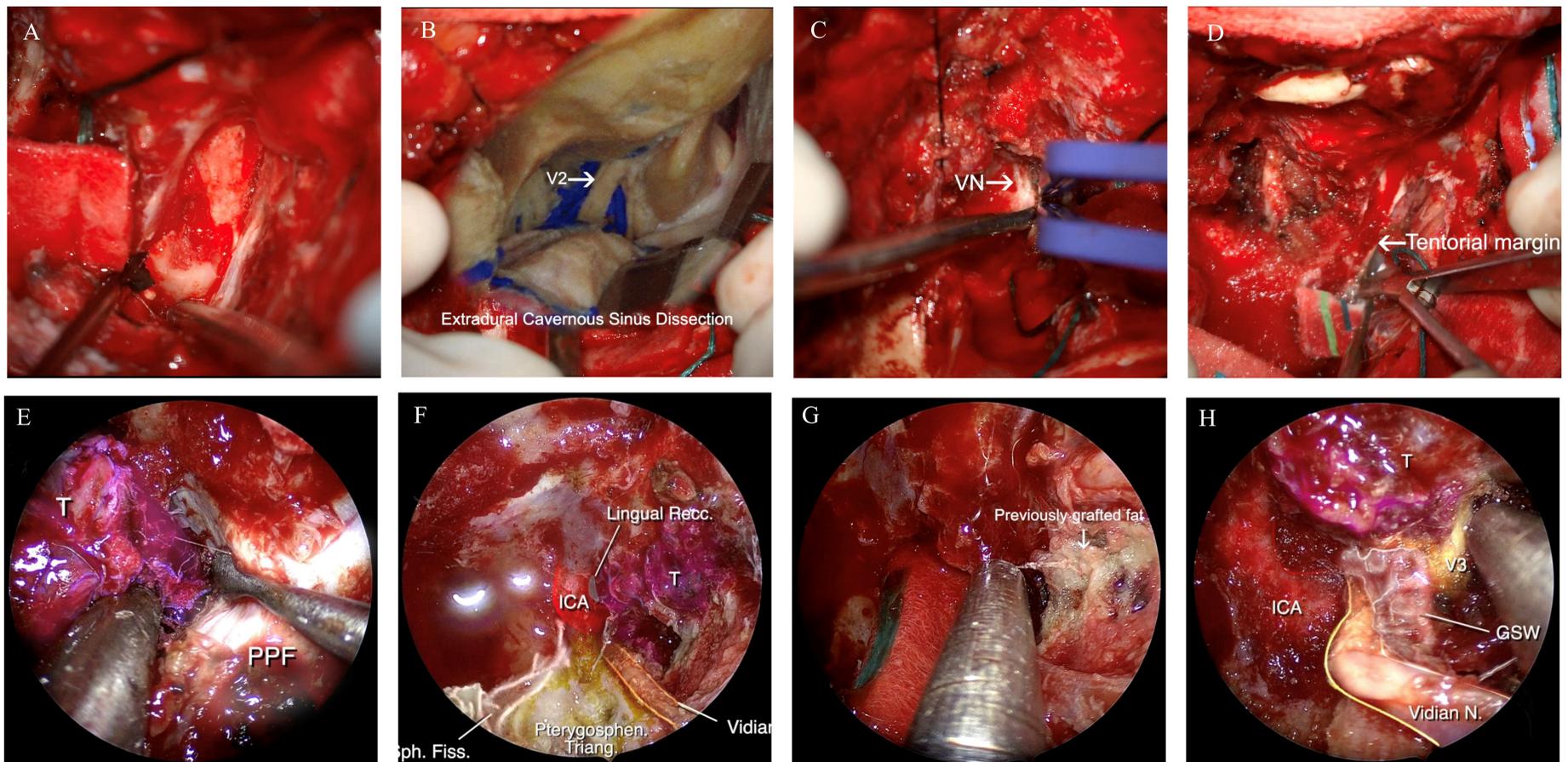
## Case Presentation

A 72-year-old woman presented with progressive diplopia, left ptosis, and facial numbness. Examination showed left abducens palsy (limited abduction), ptosis, and mild sensory loss in left V1–V2. She had a giant left sphenoid meningioma resected in 2017, followed by radiotherapy for residual disease. Current imaging showed recurrent tumor involving the left cavernous sinus and adjacent skull base compartments. Preoperative ICA balloon test occlusion was negative, and embolization of the left middle meningeal/accessory middle meningeal arteries significantly reduced tumor blood supply. A staged combined microsurgical–endoscopic strategy was selected.

**Figure 1.** Preoperative MRI



## Surgical Technique



**Figure 2.**

Left Dolenc approach

A. OZ approach; extradural anterior clinoidectomy.

B. Extradural dissection of the tumor base along the lateral wall of the cavernous sinus.

C. Extradural resection of the tumor outside the left cavernous sinus, with the inferolateral boundary extending to the vidian nerve.

D. Resection of the intradural tumor together with involved dura; the boundary extended to the normal tentorial edge.

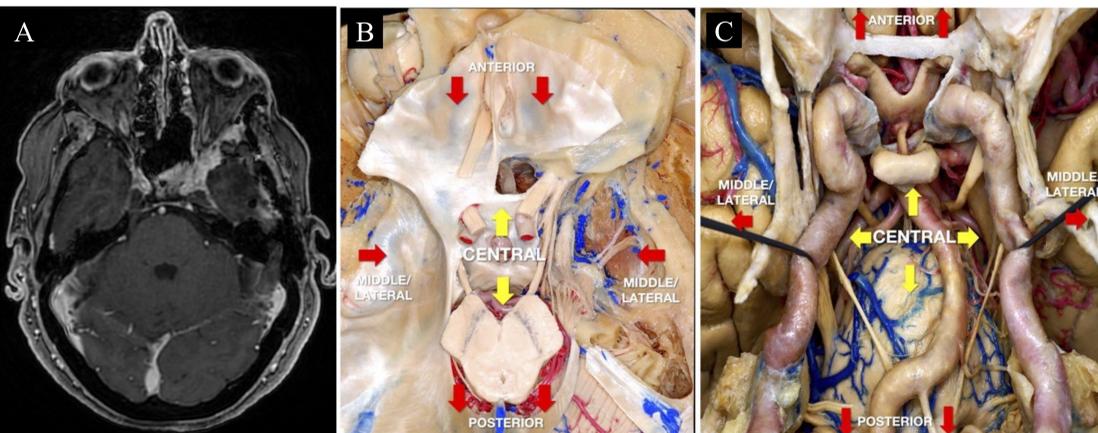
Left transpterygoid approach

E. Debulking of tumor extending into the sphenoid–ethmoid region.

F. Localization of the internal carotid artery through the pterygosphenoidal triangle.

G-H. Posterior resection boundary reached the middle cranial fossa and overlapped with the prior craniotomy field.

## Conclusions



Postoperatively, the patient had a stable course with no new neurological deficits and partial improvement of preoperative symptoms. The combined transcranial-endonasal staged strategy provides complementary exposure, improves resection of multicompartment skull base recurrence, and supports safer neurovascular preservation.

**Figure 3.** A Postoperative MRI. Skull base regions. B, transcranial skull base approaches. C, endoscopic endonasal skull base approaches.

## Contact

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## References

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