



Pretemporal Transcavernous Approach for Resection of an Orbito-Cavernous Oculomotor Schwannoma

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Abstract

Keywords

- pterional
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- cavernous sinus
- superior orbital fissure
- parasellar
- transcavernous

The following operative video demonstrates surgical tenets and nuances of the pretemporal transcavernous approach in an unusual case of a 33-year-old patient suffering new onset diplopia and a third nerve palsy due to an orbito-cavernous oculomotor schwannoma. Near total resection was accomplished through an extended pterional craniotomy with pretemporal transcavernous exposure of her lesion, resulting in resolution of her preoperative oculomotor palsy and visual dysfunction. When combined with extended pterional and modified frontotemporal orbitozygomatic approaches, the pretemporal transcavernous approach provides excellent surgical access to the parasellar region including the superior orbital fissure and cavernous sinus. Meticulous dissection and early identification of tissue planes, including cranial nerve and vascular anatomy, allows for safe removal of tumors arising in this region. The link to the video can be found at: <https://youtu.be/EuIRTP7wWBQ>.

Conflict of Interest
None declared.



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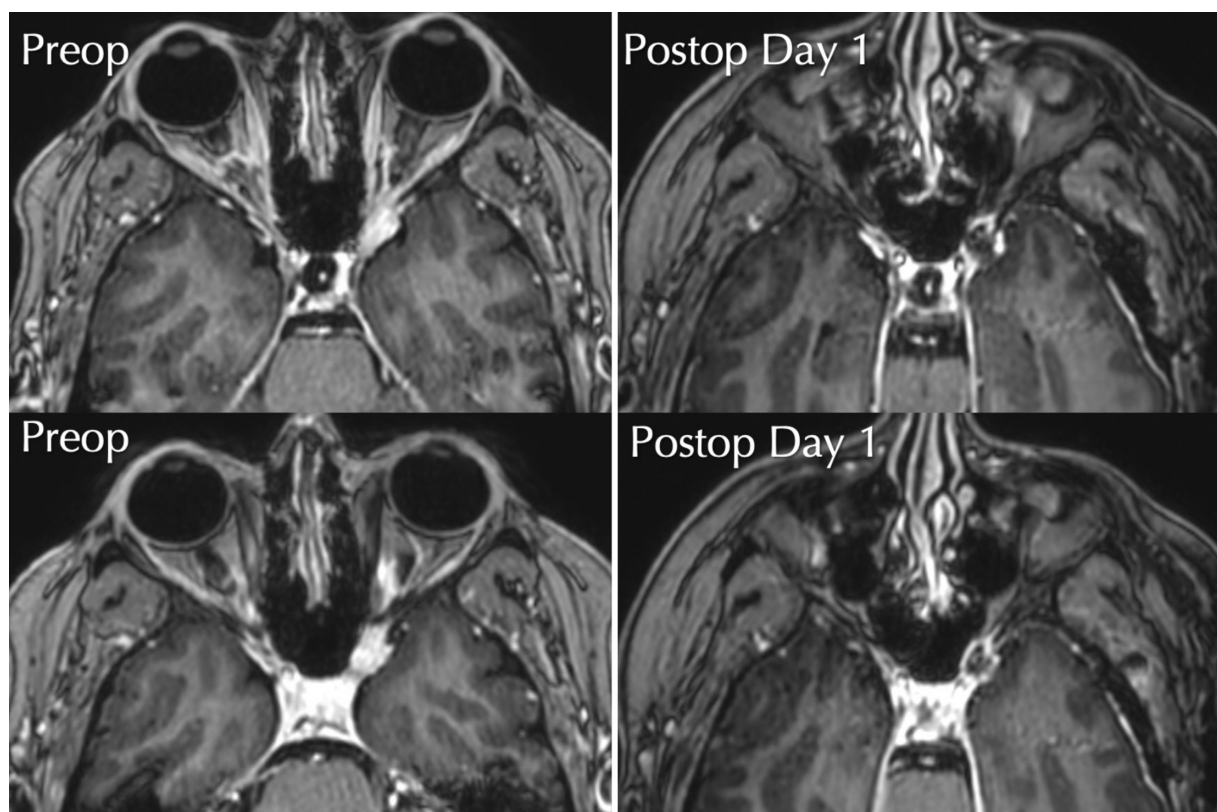


Fig. 1 Preoperative (left) postcontrast axial T1 magnetic resonance images demonstrating a homogeneously enhancing mass along the orbito-cavernous portions of the left oculomotor nerve in a 33-year-old female patient presenting with sudden onset diplopia and third nerve palsy. Initial workup for inflammatory, vascular, and neoplastic lesions was unremarkable. The lesion was approached via a pretemporal transcavernous approach following pterional craniotomy. Postoperative (right) images demonstrate near total resection with preservation of the nerve fiber containing capsule.

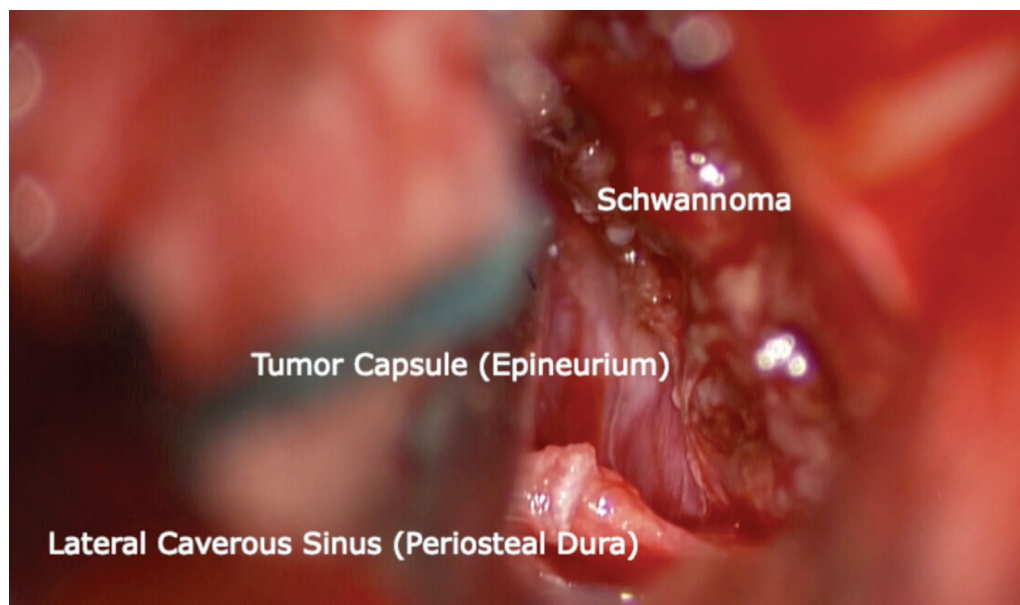


Fig. 2 Intraoperative image demonstrating the anatomic dissection planes used to safely resect the patient's oculomotor schwannoma. Following interdural dissection of the dura propria from the inner periosteal dural layer of the lateral cavernous sinus wall, the tumor capsule was identified without violating native oculomotor fibers. Development of the subcapsular plane allowed for aggressive resection while ensuring integrity of healthy nerve fibers.