# Transorbital Endoscope- and Microscope-Assisted Approach for Resection of Right Medial Temporal Glioblastoma

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## Abstract

Glioblastoma of the medial temporal lobe often present with headaches, seizures, or aphasia. Traditional transsylvian or transcortical approaches risk damage to critical structures, such as the arcuate fasciculus and motor fibers, due to brain retraction and manipulation. The lateral transorbital endoscope- and microscope-assisted approach provides direct access along the tumor's long axis, minimizing disruption to surrounding tissue. We present a 74-year-old, left-handed male with an incidentally discovered right medial temporal glioblastoma successfully resected using this minimally invasive technique, highlighting its advantages in tumor resection and patient outcomes.

## Introduction & Approach Selection

We present the case of a transorbital endoscope- and microscope-assisted resection of a medial temporal lobe glioblastoma. The patient is a 74-year-old, left-handed male with an incidentally-discovered glioblastoma on work-up of fatigue and left eyelid ptosis. Given the possibility of a right hemispheric dominance and to avoid injury to the arcuate fasciculus, we performed an expanded lateral transorbital approach with lateral orbital rim osteotomy. Note that the vector analysis of this elongate lesion is optimal for transorbital resection.

Right transorbital approach:[1-6]

- Superior eyelid crease incision
- Lateral orbitotomy

Alternative approaches:

- Right temporal craniotomy with transcortical approach[7]
- Right frontotemporal craniotomy with trans-sylvian approach[8]

## Operative Technique

- Lateral upper eyelid crease incision with dissection of orbicularis muscle and preseptal approach to superior and lateral orbital rim
- Removal of lateral orbital rim and drilling of lateral and superior orbital wall (posterior aspect of zygomatic bone, greater wing of sphenoid, and lateral-posterior aspect of orbital plate of frontal bone) between the superior and inferior orbital fissures
- Tumor resection
- Placement of dural patch, dural glue, and abdominal fat graft
- Replacement of orbital rim
- Suturing closed the pericranium, deep orbicularis muscle, superficial orbicularis muscle and skin

## Outcome & Postoperative Course

Gross total resection achieved.

Postoperative neurologic exam: neurologically intact

## Conclusion

The lateral transorbital endoscope- and microscope-assisted approach for resection of mesial temporal lesions is a good and viable approach for certain patients and avoids cortical injury to eloquent cortex such as the arcuate fasciculus.

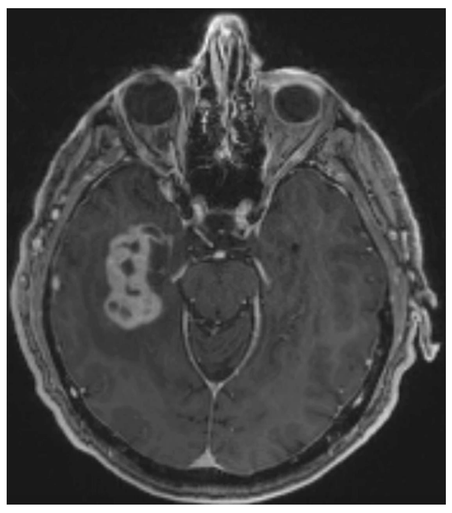

**Figure 1.** Preop axial T1 post-contrast MRI

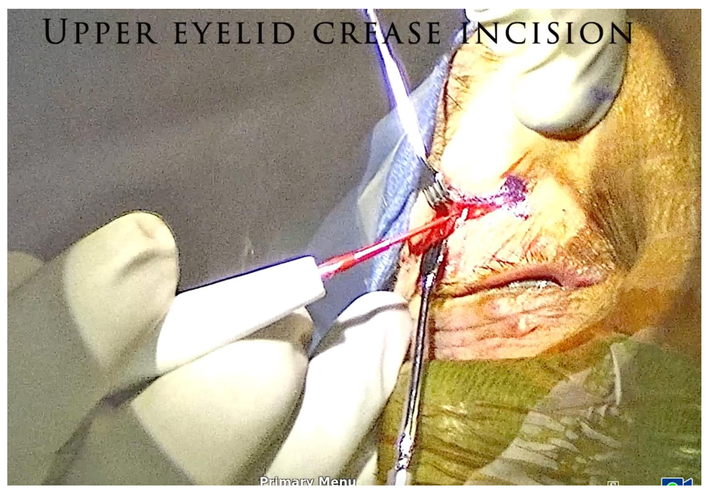


**Figure 2.** Upper eyelid crease incision

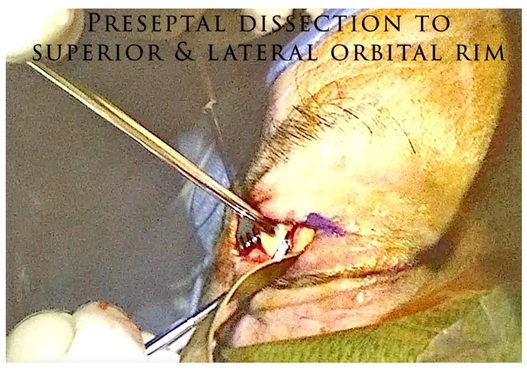


**Figure 3.** Preseptal dissection to superior and lateral orbital rim

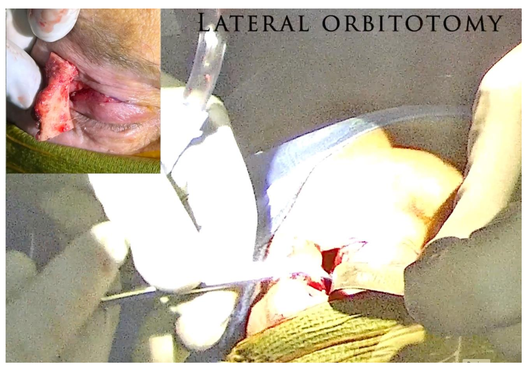


**Figure 4.** Lateral orbitotomy


**Figure 5.** Drilling greater wing of sphenoid

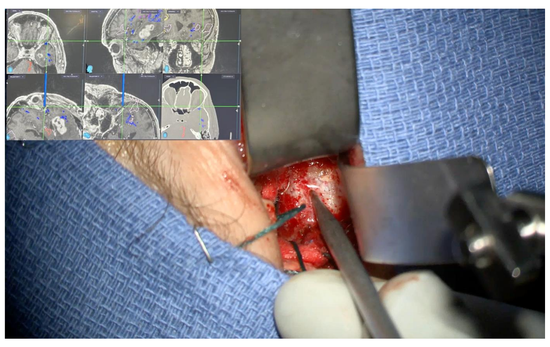

**Figure 6.** Trajectory of approach


**Figure 7.** Tumor resection with fluorescein assistance

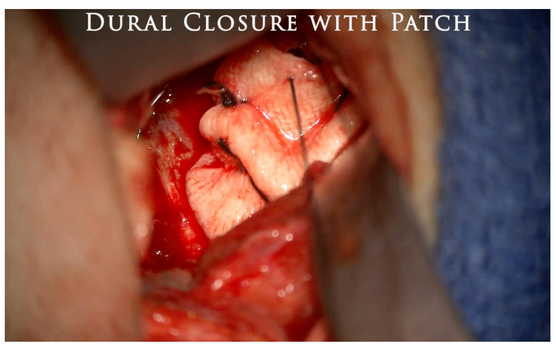


**Figure 8.** Dural closure with patch

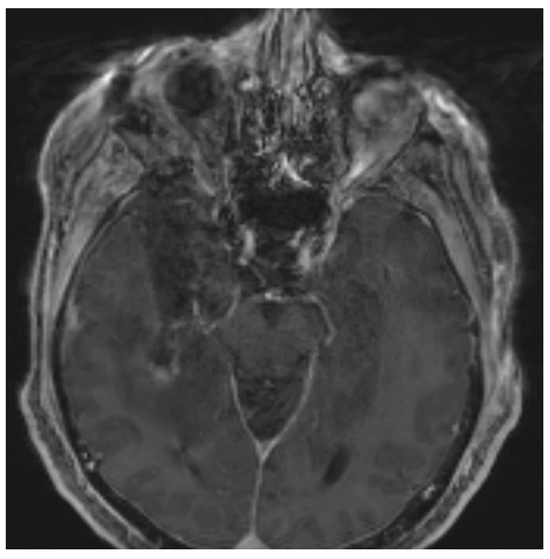

**Figure 9.** Postop axial T1 post-contrast MRI demonstrating gross total resection

**Figure 10.** Postop 3D skull reconstruction highlighting the approach through the lateral orbital wall and sphenoid wing and plating of lateral orbital rim

## Contact

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