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Endoscopic Endonasal Approach to the Anteromedial Temporal Fossa and Mobilization of the Lateral Wall of the Cavernous Sinus Through the Inferior Orbital Fissure and V1-V2 Corridor: An Anatomic Study and Clinical Considerations

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Abstract

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Images

References

Highlights

- Orbital muscle of Müller and zygomatic nerve can be landmarks in the approach to the anteromedial temporal fossa.
- Except for resection of the middle turbinate, we preserved the anatomic structures in the nasal cavity as much as possible.
- This approach may be an alternate surgical corridor that offers a direct route with less temporal retraction.

Objective

The aim of this study was to identify key anatomic landmarks useful in gaining access to the anteromedial temporal region via the corridor formed by the inferior orbital fissure (IOF), the ophthalmic branch of the trigeminal nerve (V1), and the maxillary branch of the trigeminal nerve (V2) via an endoscopic endonasal approach (EEA).

Methods

An anatomic dissection of 6 cadaver heads was performed to confirm the feasibility and applicability of an EEA for accessing the anteromedial temporal region.

Results



After middle turbinectomy, the lateral recess of the sphenoid sinus was opened, the orbital apex was exposed, and the posterior wall of the maxillary sinus was removed, in sequence. The IOF and the pterygopalatine fossa (PPF) were then identified. After opening the foramen rotundum (FR) and removing the bony structure between the FR, V2 was transposed downward. The orbital muscle of Müller was removed. The PPF was mobilized downward exposing the greater wing of the sphenoid bone (GWS). The GWS between V1 and V2 was drilled, therefore exposing the temporal dura. With blunt dissection, the medial temporal dura was peeled away from the cavernous sinus to increase access to the anteromedial temporal region.

Conclusions



The anteromedial temporal fossa was exposed by drilling the V1-V2 triangle corridor via an EEA. Endoscopic endonasal exposure of the anteromedial temporal fossa is feasible and requires limited endonasal work. This approach may be considered as an alternate surgical corridor to the temporomesial lobe that offers the advantages of a direct route with less temporal lobe retraction.

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