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Video Abstract

Endoscope-assisted supraorbital approach for excision of tuberculum sella meningioma: Technical nuances

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ABSTRACT

Background: Tuberculum sellae meningiomas (TSMs) are benign dural-based lesions of the anterior cranial fossa, which mainly present with impaired visual acuity/field deficits secondary to compression of the optic apparatus. Surgical management is recommended as the optimal strategy for large compressive TSMs, with goals of safe maximal resection, optic nerve decompression, and potential vision restoration. The philosophy of adapting keyhole approaches for such resections is commonly highlighted; however, it comes with notable criticism of encountering major blind spots during surgical resection and limited anatomical exposure. Adding angled endoscopes enhances the expanded panoramic view of the skull base and provides a synergistic modality to microsurgery for maximizing total resection and navigating the blind spots.

Case Description: This video case presentation aims to highlight the technical nuances of endoscope-assisted microscopic supraorbital craniotomy for TSM resection invading bilateral optic canals in a 66-year-old female presenting with progressive right eye vision loss (OD Hand motion). The video emphasizes traditional skull-base surgical principles of TSM resection through the optics of a keyhole approach augmented by endoscopic tumor removal. Gross total resection was achieved, the patient's vision improved to 20/25, and she was discharged home on postoperative day 2.

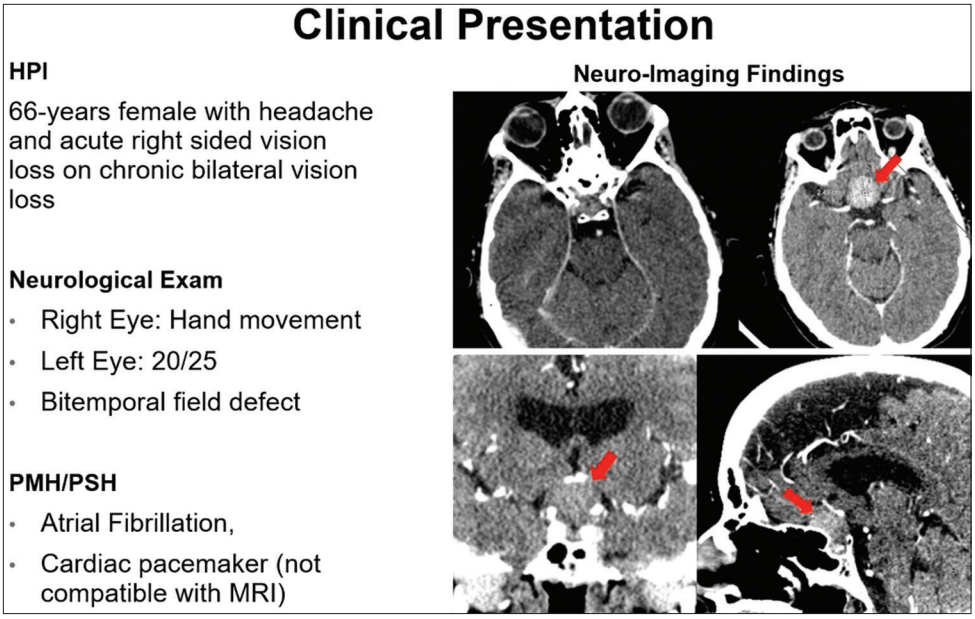
Conclusion: The endoscope-assisted supraorbital craniotomy offers a safe surgical corridor for TSM, using a limited craniotomy with minimal brain retraction in appropriately selected individuals, particularly with larger tumors with greater lateral extension and above the planum.

Keywords: Endoscopy, Minimally invasive, Supraorbital craniotomy, Tuberculum sella meningioma

[Video 1]-Available on:
www.surgicalneurologyint.com

Annotations

1. 000.08 – Clinical presentation
2. 000.37 – Rational for the procedure
3. 000.59 – Potential benefits and risks of the procedure
4. 01.27 – Alternatives and reasons such approaches were not chosen
5. 02.09 – Procedure set up



Video 1: Endoscope-assisted supraorbital craniotomy for excision of tuberculum sella meningioma: Technical Nuances. HPI: History of present Illness, PMH: Past medical history, PSH: Past surgical history.

6. 02.22 – Key surgical steps
7. 03.09 – Disease background
8. 03.39 – Surgical video
9. 03.54 – Opening of opticocarotid cistern
10. 04.12 – Opening of Sylvian fissure
11. 04.34 – Decompression of ipsilateral optic nerve
12. 05.19 – Tumor debulking
13. 05.34 – Peeling of tumor from C/L optic nerve
14. 05.54 – Preserving the arachnoid plane
15. 08.30 – C/l optic nerve decompression
16. 08.39 – Endoscopic inspection and tumor removal
17. 09.01 – Clinical and imaging outcome

Ethical approval

The Institutional Review Board approval is not required.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

Use of artificial intelligence (AI)-assisted technology for manuscript preparation

The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript and no images were manipulated using AI.

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