

# Endoscopic Endonasal Transcavernous Transoculomotor Triangle Approach for the Resection of a Knosp 4 Pituitary Adenoma

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## Abstract

**Objectives** The current video presents the nuances of the endoscopic endonasal transcavernous transoculomotor triangle approach for the resection of a Knosp 4 pituitary adenoma protruding through the superior wall of left cavernous sinus.

**Design** The video analyzes the clinical presentation, preoperative workup, and imaging, surgical steps and technical nuances of the surgery, the clinical outcome, and follow-up imaging.

**Setting** The patient was treated by a skull base team with bimanual, three- to four-handed endoscopic technique.

**Participants** The patient was a 54-year-old male with a Knosp 4 prolactinoma presented with headaches and blurred vision in both eyes for 3 weeks. He was managed with endoscopic surgery due to his preference of surgery as a rapid primary therapy to relieve mental stress of an invasive brain tumor after awareness of all therapeutic options, including the preoperative medical treatment.

**Main Outcome Measures** The main outcome was measured in the following aspects, including the resection extent, the symptoms improvement, the radiological and endocrinological follow-up results, as well as the postoperative course of complications.

**Results** Nearly gross total resection was achieved with one-stage endoscopic surgery. The patient recovered well with improved headaches. Postop oculomotor deficit was recovered in 2 months. Endocrinological remission was kept for 12 months with one pill of bromocriptine daily.

**Conclusion** The endoscopic endonasal transcavernous transoculomotor triangle approach is an appropriate option for resecting Knosp 4 pituitary tumors with intracranial extension through the roof of cavernous sinus at one stage.

The link to the video can be found at <https://youtu.be/-YJ2PKP9voY>.

## Keywords

- endoscopic
- endonasal
- cavernous sinus
- oculomotor triangle
- pituitary adenoma



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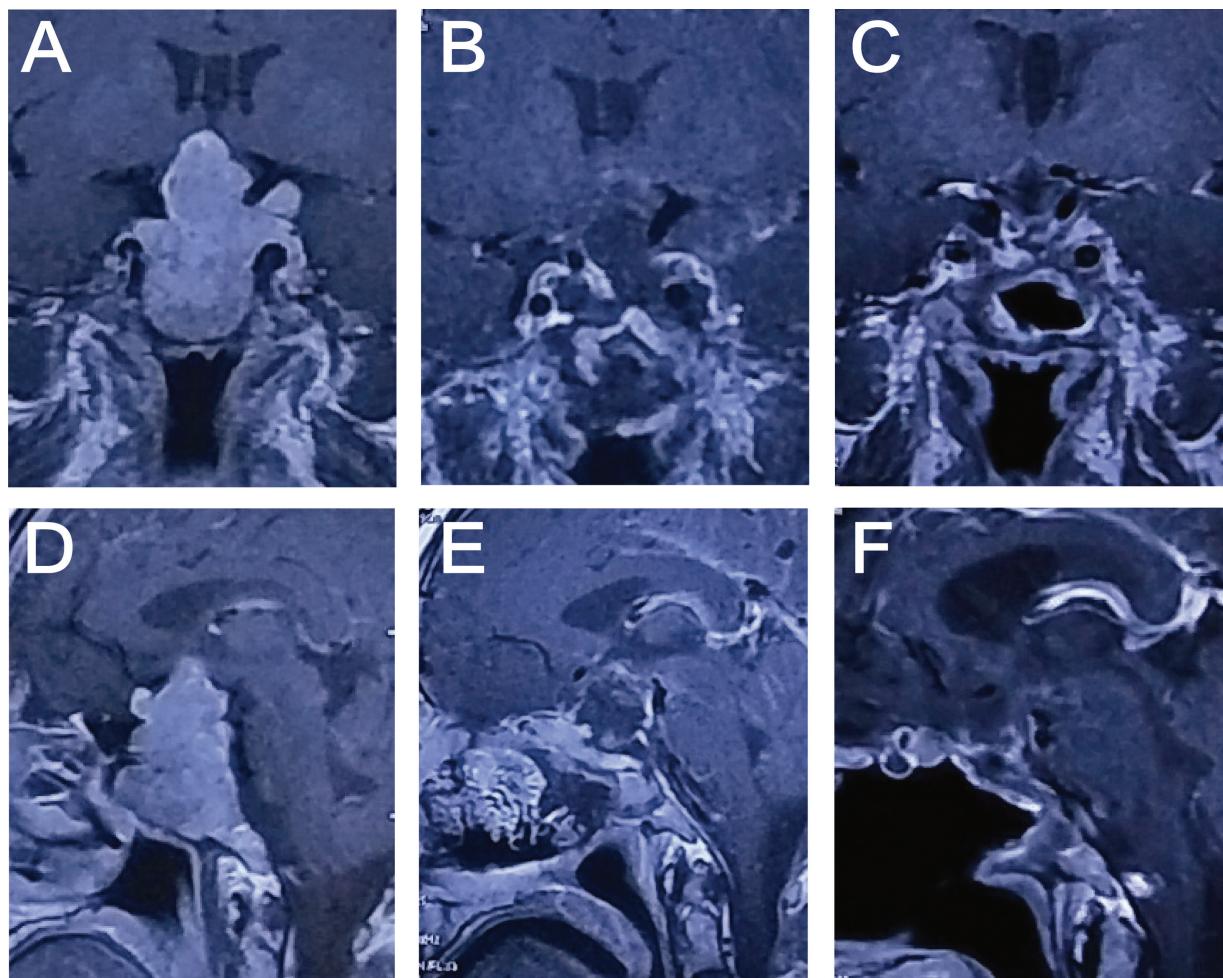
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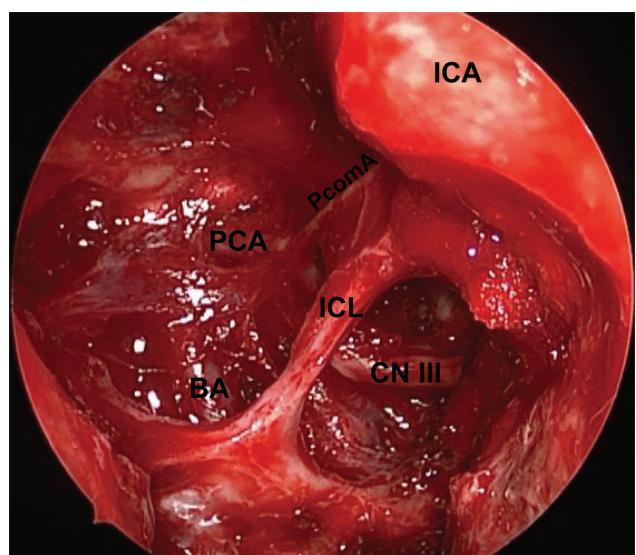
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**Fig. 1** Patient's magnetic resonance imaging (MRI). Preoperative (A, D), 2 days postoperative (B, E), and 3 months postoperative (C, F) MRIs with coronal and sagittal views showing the removal of a Knosp 4 pituitary adenoma with left cavernous sinus invasion.



**Conflict of Interest**  
None declared.

**Fig. 2** Intraoperative image showing the superior and lateral exposure through oculomotor triangle and the essential neurovascular structures in this area during tumor resection.