

# Endoscopic endonasal intradural pituitary hemitransposition in a pediatric retroinfundibular craniopharyngioma: Technical nuances

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## Introduction

Traditional anterolateral transcavernous or transpetrosal approaches to the interpeduncular fossa are surgically limited by optic apparatus and oculomotor nerve, respectively.<sup>1,2</sup> The endoscopic endonasal approach requires minimal manipulation of these structures by utilizing a midline caudal-cephalad angle of view, although the pituitary gland and infundibulum are natural barriers.<sup>3</sup> A unilateral pituitary transposition effectively expands the working corridor to access lesions in this area, such as craniopharyngiomas, while preserving the venous outflow of the gland.<sup>3-6</sup> The authors detail the technical nuances of an endoscopic endonasal intradural pituitary hemitransposition for an interpeduncular craniopharyngioma.

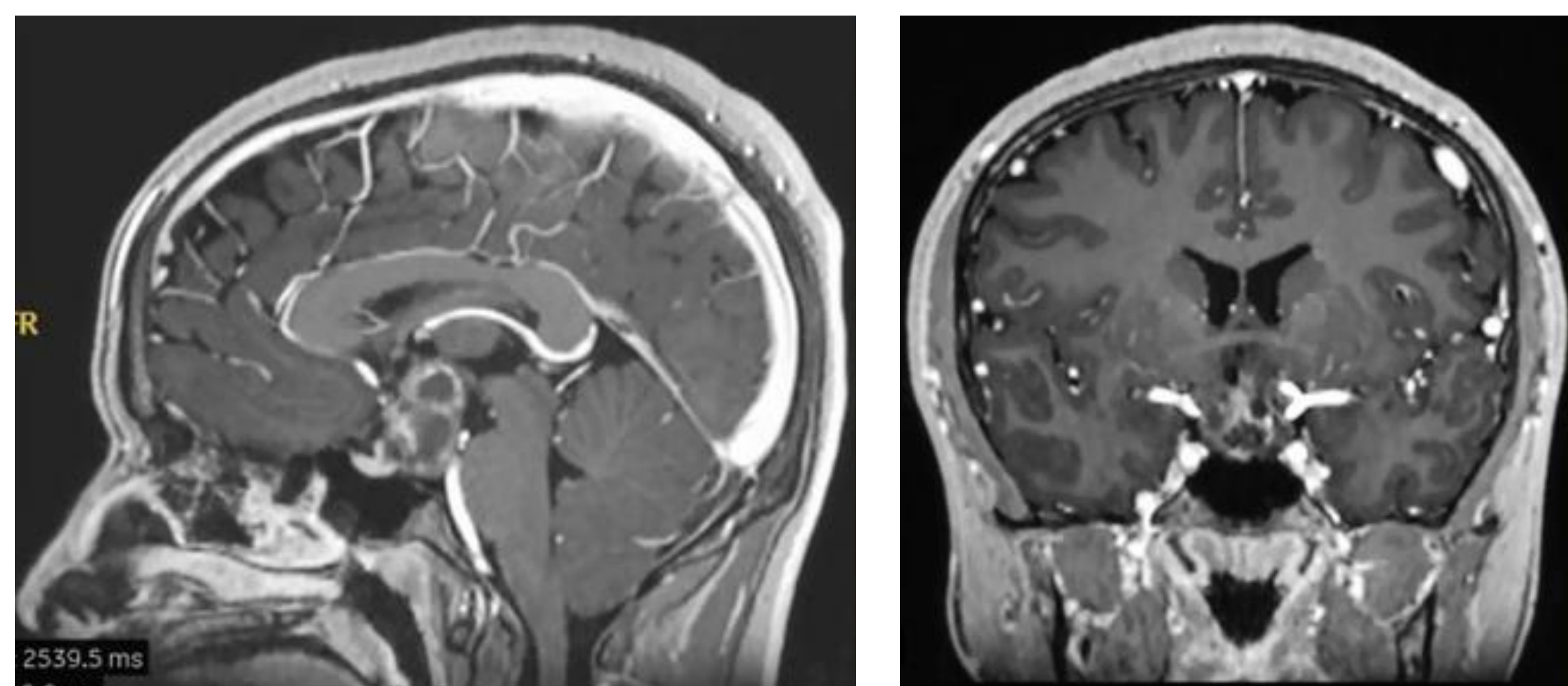


Figure 1. Preoperative MRI.

## Methods and Materials

The patient is a 16-year-old male presented with headache and fatigue. A partial visual field defect and partial diabetes insipidus were noted. MRI revealed a heterogeneous-enhanced mass occupying the interpeduncular fossa (Figure 1). The patient had a history of unsuccessful tumor resection via a pterional approach. An endoscopic endonasal transtuberculum/transclival approach with pituitary hemitransposition was performed. To control venous bleeding, the superior intercavernous sinus was isolated and ligated by an H-shaped dural incision. The pituitary ligaments were meticulously released off the left medial cavernous sinus wall, and the left superior hypophyseal artery was preserved (Figure 2).

## Results

Near-total resection was achieved (Figure 2) and histologic exam confirmed an adamantinomatous craniopharyngioma. Postoperative neurological exam remained unchanged, although the patient developed panhypopituitarism. No CSF-leak was encountered. The patient subsequently underwent adjuvant proton beam radiotherapy, and progressive visual improvement was noticed at the last follow-up visit.

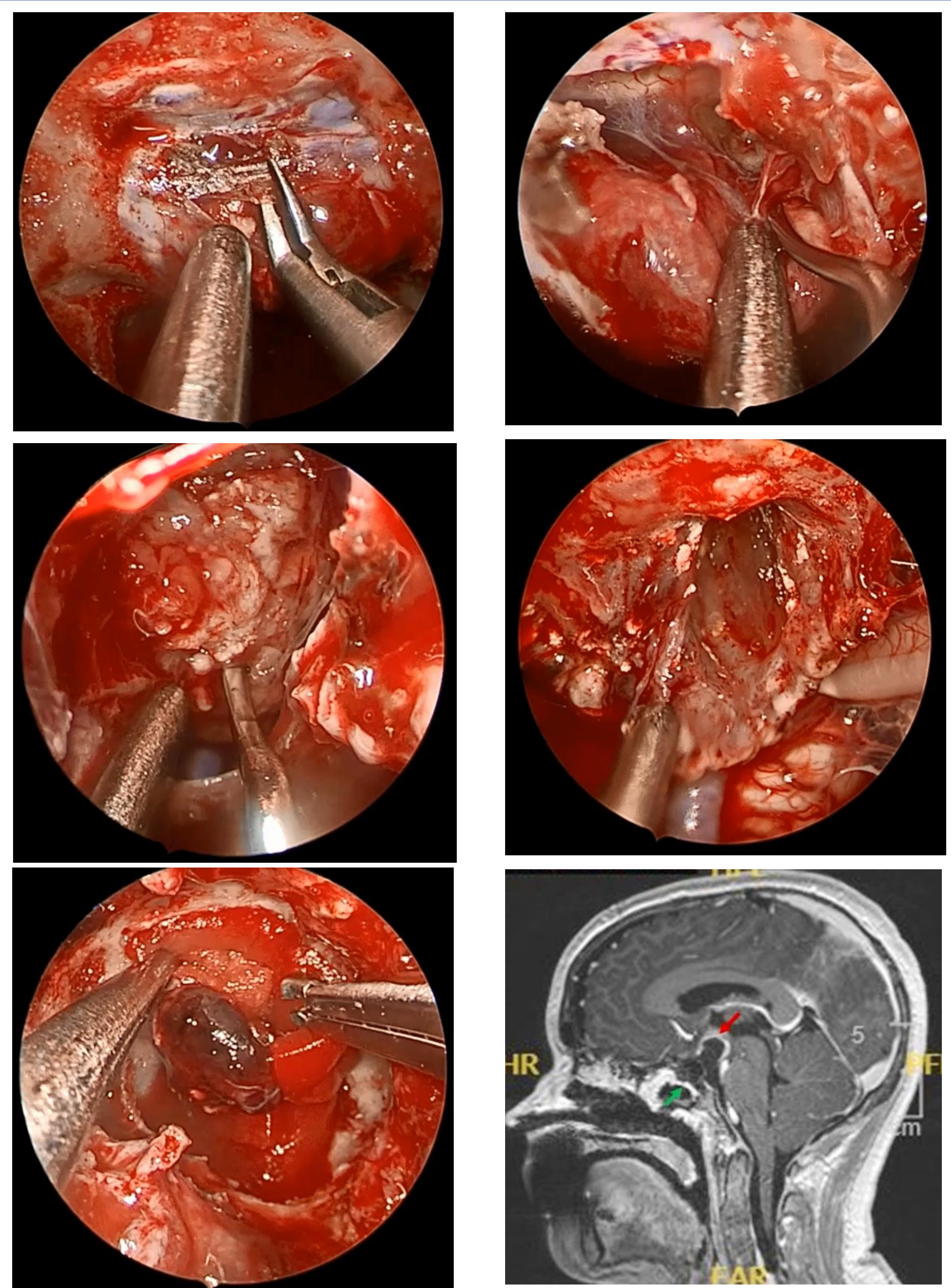


Figure 2. Intraoperative views and postoperative follow-up MRI.

## Conclusions

Endoscopic endonasal pituitary hemitransposition typically protects the critical neurovascular boundaries of the interpeduncular fossa. For midline subdural lesions particularly retroinfundibular craniopharyngioma, an “intradural” transsellar hemitransposition is preferred over its interdural transcavernous counterpart. Therefore, the benefits of a midline intradural approach, which offers greater access and surgical freedom, may outweigh the risk of endocrine dysfunction. The procedure should be performed in experienced multidisciplinary centers, and surgical goals should be individualized based on the tumor behavior and patient characteristics.

## Contact

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