



## Complications of Extended Endoscopic Endonasal Surgery in Elderly Patients

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## **Abstract**

Extended endoscopic endonasal procedures are not unique among surgical interventions in carrying increased risk in the elderly population. There are, however, components of the procedure, namely high-flow cerebrospinal fluid leaks, that do result in the potential for increased perioperative morbidity for these patients. We present the case of a 77-year-old male with a large invasive pituitary macroadenoma resected through a transplanum-transtuberculum-transsellar endonasal approach. A gross total resection was obtained with resolution of the patient's preoperative ophthalmologic deficits. One month postoperatively, the patient developed progressive lethargy and cranial imaging demonstrated a left convexity subacute subdural hematoma. This was evacuated through a twist drill craniostomy. Despite measures to limit the operative time of the initial endonasal procedure as well as the absence of a postoperative cerebrospinal fluid fistula, the patient still developed this complication. Along with more typical potential causes of postoperative decline following extended endonasal procedures, problems from high-flow intraoperative cerebrospinal fluid leaks alone can result in morbidity in the elderly population. This should be acknowledged preoperatively and a high suspicion should exist for the presence of intracranial hemorrhage in these patients with any postoperative deficits. Additional intraoperative measures can be utilized to minimize such risks.

## Keywords

- endoscopic
- endonasal
- ► pituitary adenoma
- subdural hematoma
- ► elderly
- complication

The link to the video can be found at: https://youtu.be/EkLmt2T8\_UE.

Conflict of Interest None.



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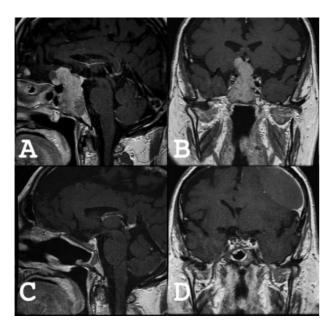




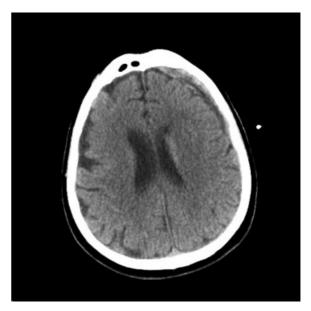


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**Fig. 1** Preoperative (A) sagittal and (B) coronal magnetic resonance imaging (MRI) showing a large invasive pituitary macroadenoma. Postoperative (C) sagittal and (D) coronal MRI at 3 months showing gross total resection of the tumor and a large left frontal convexity subdural hematoma.



**Fig. 2** Cranial computed tomography (CT) at 6 months postoperatively showing a small residual left frontal convexity subdural hematoma after evacuation.