



## Video Abstract

# Endoscopic resection of supergiant pituitary adenoma

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## ABSTRACT

**Background:** Giant pituitary adenomas are a rare finding and the literature is inconclusive regarding the most appropriate approach. In supergiant adenomas, where the size of the tumor is exceptional, both a combine approach versus a solely transcranial or endoscopic approach have been reported.<sup>[2,3,5]</sup>

**Case Description:** In this video, an entirely endoscopic resection of a supergiant pituitary adenoma is demonstrated. The exceptional size (4.5 × 5.8 × 5.4 cm) of the tumor and the peculiarity of the anatomical relations are documented in the video. The anterior cerebral arteries, both the A1 and A2 tracts, as well as the anterior communicating arteries are shown to be posteriorly dislocated and encased by the tumor which is peeled from the arteries themselves. Furthermore, the optic nerves are decompressed and cleaned from any residual tumor. The procedure is highly technically challenging since the furthest part of the adenoma is also the one attached to the great intracranial arteries. A 45 optic and angle instruments were used for the major part of the surgery. Considering the high risk of postoperative CSF leak, a multilayer closure with nasoseptal flap was chosen. The postoperative MRI showed a gross total resection of the lesion in the absence of any complications and no new neurological nor endocrinological deficit appeared.

**Conclusion:** Expanded endoscopic endonasal approach could represent a valuable way to face giant adenoma, providing a direct corridor toward the lesion and safe control of both the chiasmatic vasculature and the anterior communicating artery complex. Multilayer reconstruction is mandatory to avoid postoperative CSF leak.<sup>[1,4]</sup>

### [Video 1]-Available on:

[www.surgicalneurologyint.com](http://www.surgicalneurologyint.com)

### Annotations<sup>[1-5]</sup>

- 1) 00:07 – Clinical Presentation
- 2) 00:23 – Neurological Examination
- 3) 00:36 – Neuro-Imaging Findings
- 4) 01:05 – Surgical Alternatives
- 5) 01:28 – Surgical Positioning
- 6) 01:31 – Necessary Equipment
- 7) 03:29 – Tumor Debulking
- 8) 05:17 – Optic Nerves Decompression
- 9) 05:31 – Tumor Dissection from Anterior Cerebral Artery and Anterior Communicating Artery

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- 10) 06:14 – Clinical Outcome
- 11) 06:25 – Disease Background
- 12) 06:35 – Radiological Outcome.

#### Declaration of patient consent

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

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Nil.

#### Conflicts of interest

There are no conflicts of interest.

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