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Endoscopic Endonasal Resection of Rathke Cleft Cyst with Xanthogranulomatous Change: Two-Dimensional Operative Video

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Abstract

Objective Sellar xanthogranulomas (XGAs) are a rare pathological subtype of hypophysitis reflecting a degenerative process of Rathke's cleft cyst with predilection in young adults. While the histological features have been described, there is limited discussion on the technical expectations in surgical management. We present the clinical, radiographic, and surgical features of the third literature-reported XGA in the pediatric population.

Setting The patient was a 17-year-old boy who first identified by ophthalmologically confirmed peripheral vision loss. Subsequent endocrine workup identified delayed-onset puberty and hypopituitarism. Magnetic resonance imaging (MRI) showed a nonenhancing 2.6-cm T1 and T2 sellar-based hyperintense mass with suprasellar extension and mass effect on the optic chiasm. A small T1 hypointense encased nodule was also seen (►**Fig. 1**). Consent for resection was obtained.

Results Intraoperatively the tumor was firm and adherent, requiring piecemeal removal. Radiofrequency ablation enabled ergonomic debulking and minimize thermal injury (►**Fig. 2**).[1] We used initial settings of 25 W, equivalent to 55 W. A cystic component with motor oil–like fluid was encountered and decompressed. The tumor was notably very adherent to the optic nerve and infiltrated the stalk, requiring its

Keywords
- endoscopic endonasal
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- pituitary
- Rathke's cleft cyst
- xanthogranuloma

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truncation. Closure was achieved by fat graft dead space plugging, fascia lata underlay, Medpor gasket seal, and nasoseptal flap.

Conclusion Pathology confirmed dense fibrous tissue with features of chronic inflammation, cholesterol clefts, hemosiderin pigment, multinucleate giant cells, and foamy macrophages. Additional cyst wall sampling identified squamous and ciliated epithelial lining, collectively consistent with Rathke's cleft cyst and xanthogranulomatous reaction. These lesions can undergo surgical cure with resection, most commonly by transsphenoidal approach.

The link to the video can be found at: https://youtu.be/S2n5iQ3aFgc.

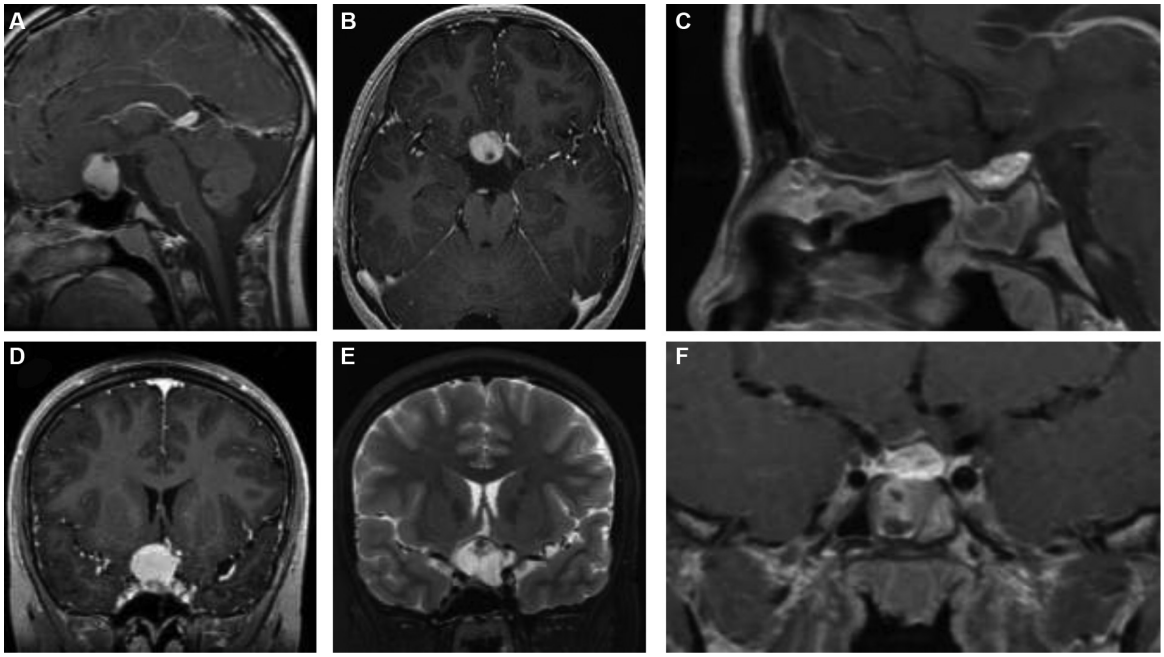

Fig. 1 (**A–C**) Preoperative T1-gadolinium enhanced sagittal, axial, and coronal sequences. (**D**) Preoperative T2 coronal sequence. (**E**, **F**) Postoperative T1 gadolinium-enhanced sagittal and coronal sequences.

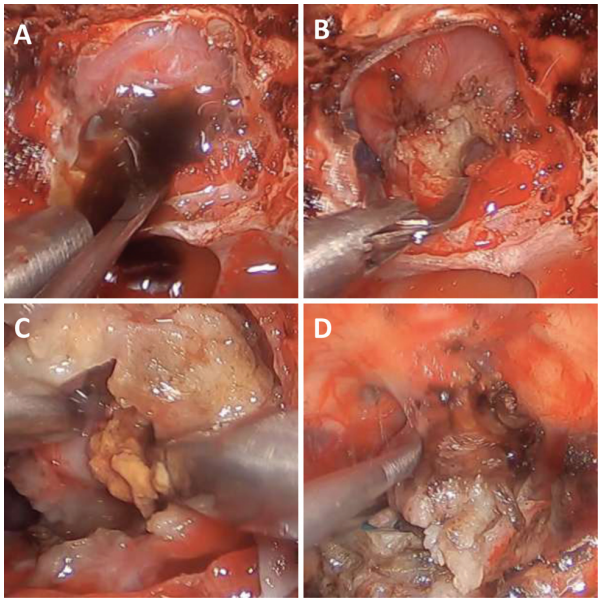

Fig. 2 Intraoperative images of tumor texture and behavior, including (**A**) motor oil drainage, (**B**) thick, fibrous cystic capsule, (**C**) cholesterol granuloma, and (**D**) adhesion to the optic chiasm.

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Conflict of Interest
None declared.

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