Ectopic Non-Functional Pituitary Adenoma: Case Report and Literature Review

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Introduction

- Ectopic pituitary adenomas (EPA) are rare adenomas located outside the sella turcica.
- First reported in 1909, they are thought to arise from incomplete migration of pituitary tissue from Rathke's pouch through the craniopharyngeal canal.
- EPA are thus often found under respiratory epithelium and frequently involve sphenoid or clival bone.
- Tumors may be functional (e.g., ACTH, GH, TSH-secreting) and present with endocrinologic dysfunction.
- Non-functional ectopic pituitary adenomas are rare and may present a diagnostic challenge.

Discussion and Conclusion

- Imaging is crucial to differentiate between other diagnoses including minor salivary gland neoplasm/malignancy.
- Resection may be necessary due to erosion of nearby structures.
- A multidisciplinary approach for surgical resection can be safe and effective.

Case Report

- 75-year-old male with prior aortic valve replacement, coronary artery bypass surgery and gradual cognitive decline was referred for a sinonasal mass identified on imaging.
- MRI identified a 2.2 × 2.6 × 1.5 cm mass along the sphenoid sinus floor extending to the nasal septum.
- CT neck and comparison to prior CT from 8 years earlier redemonstrated the mass with interval growth.
- Biopsy was consistent with pituitary adenoma.
- Notably, there was no connection between the EPA and sella turcica, with an intact sellar face and no bony opening on imaging.
- The patient was evaluated at our multidisciplinary pituitary clinic and elected for endoscopic endonasal resection of the mass and exploration of the sella.
- Bilateral sphenoidotomies and a posterior septectomy were performed with gross tumor in the sphenoid sinus floor. The left sphenopalatine artery was sacrificed, and the sphenoid floor between bilateral vidian nerves was removed along with the keel and tumor.
- The sella was explored and noted to contain a normal pituitary gland.
- The patient had an uneventful recovery and was discharged on postoperative day 1.
- Final pathology was consistent with non-functional EPA with diffusely positive synaptophysin, chromogranin, CAM 5.2, and SF1 staining, but negative CK7, p40, S100, PIT, TPIT, FSH, LH, Prolactin, GH, TSH, and ACTH. Ki-67 positivity was <3%.

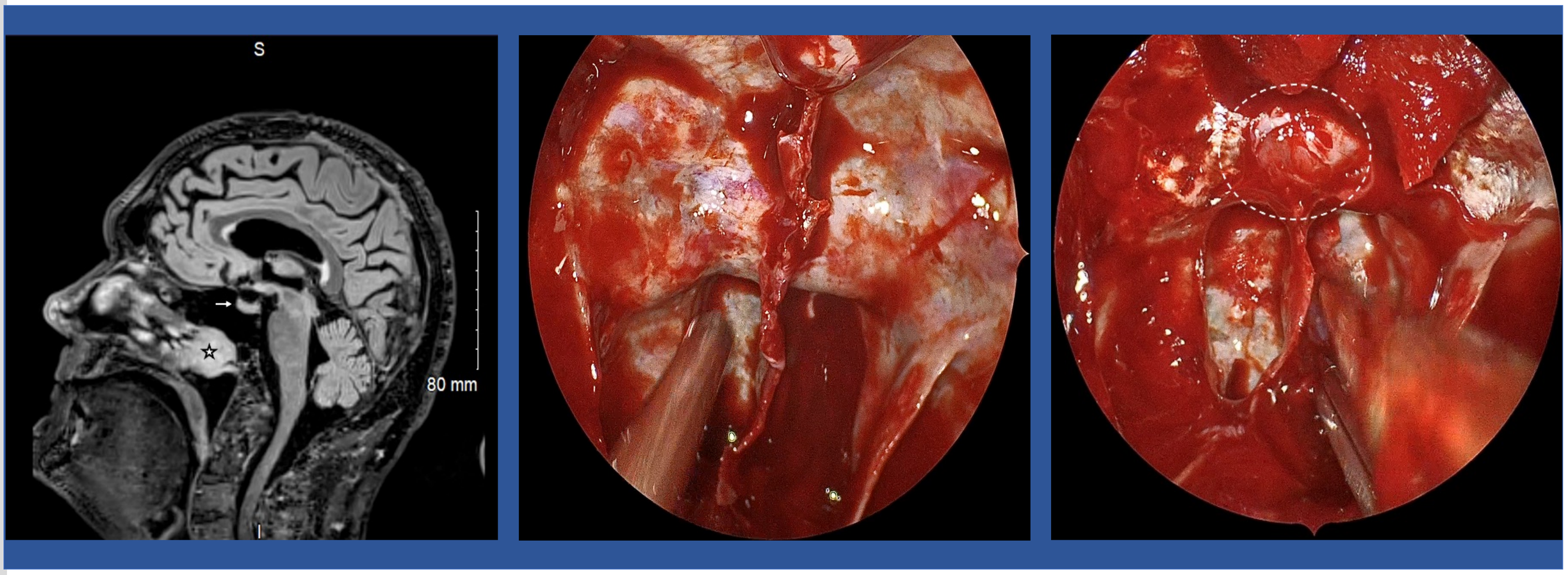

Figure 1 – (Left) Sagittal T2 weighted FLAIR MRI. Star denotes the ectopic pituitary adenoma. Arrow indicates normal position of the pituitary gland in the sella. (Middle) Intraoperative view of intact sellar wall. (Right) Dotted circle denotes opened sellar wall and dura without pituitary adenoma.

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References

1. Hazra D, Chandy GM, Chakraborty I, Ghosh A. Nonfunctioning Ectopic Pituitary Adenoma: A Rare Case Report from Southern Asia. Asian J Neurosurg. 2024 Dec 20;20(2):362-366. doi: 10.1055/s-0044-1801282.
2. Kikuchi K, Kowada M, Sasaki J, Sageshima M. Large pituitary adenoma of the sphenoid sinus and the nasopharynx: Report of a case with ultrastructural evaluations. *Surgical Neurology*. 1994;42(4):330-334. doi:10.1016/0090-3019(94)90404-9
3. Siegert B, vz Mühlen A, Brabant G, Saeger W, Vogt-Hohenlinde C. Ectopic nonfunctioning pituitary adenoma in the sphenoid sinus. *J Clin Endocrinol Metab*. 1996;81(1):430-431. doi:10.1210/jcem.81.1.8550790
4. Yang BT, Chong VFH, Wang ZC, Xian JF, Chen QH. Sphenoid sinus ectopic pituitary adenomas: CT and MRI findings. *Br J Radiol*. 2010;83(987):218-224. doi:10.1259/bjr/76663418
5. Campana C, Nista F, Castelletti L, et al. Clinical and radiological presentation of parasellar ectopic pituitary adenomas: case series and systematic review of the literature. *J Endocrinol Invest*. 2022;45(8):1465-1481. doi:10.1007/s40618-022-01758-x
6. Shuman W, Loewenstern J, Pai A, Bederson J, Shrivastava R. Variability in Clinical Presentation and Pathologic Implications of Ectopic Pituitary Tumors: Critical Review of Literature. *World Neurosurgery*. 2019;122:397-403. doi:10.1016/j.wneu.2018.10.200