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Rare Case of a Disappearing Pituitary Adenoma During the Coronavirus Disease 2019 (COVID-19) Pandemic

David P. Bray¹, C. Arturo Solares², Nelson M. Oyesiku¹

Key words

- COVID-19
- Pituitary adenoma
- Pituitary apoplexy

Abbreviations and Acronyms

COVID-19: Coronavirus disease 2019

CT: Computed tomography

MRI: Magnetic resonance imaging

From the Departments of ¹Neurosurgery and

²Otolaryngology, Emory University School of Medicine, Atlanta, Georgia, USA

To whom correspondence should be addressed:

David P. Bray, M.D.

[E-mail: dbray3@emory.edu]

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Pituitary adenomas can undergo ischemic infarction or hemorrhagic transformation in pituitary apoplexy, a well-defined syndrome characterized by headache, vision loss, cranial nerve dysfunction, and pituitary hormone dysfunction.^{1,2} We present a case of a 28-year-old woman who presented to our outpatient clinic with severe headaches that began several months before our consultation. She presented with hypopituitarism that necessitated cortisol and thyroid supplementation. She never received high-dose glucocorticoid treatment. Vision was normal. Magnetic resonance imaging (MRI) demonstrated an enhancing mass within the pituitary sella measuring 1.9 × 1.8 × 2.7 cm (craniocaudal by anteroposterior by axial) with a Knosp 3A cavernous sinus invasion bilaterally (Figure 1A and B).³ Imaging was most consistent with a pituitary adenoma with possible antecedent apoplexy. We

We present a case of a 28-year-old woman with a history of severe headaches and pituitary insufficiency. She was found to have a large, enhancing, sellar mass consistent with a pituitary adenoma. The patient's surgical care was delayed due to the coronavirus disease 2019 (COVID-19) pandemic, and follow-up imaging revealed spontaneous involution of the sellar mass. Spontaneous involution of pituitary masses has been described but not often encountered in clinical practice. This case highlights that follow-up imaging is necessary when scheduling elective surgeries during the COVID-19 pandemic.

recommended endonasal transsphenoidal resection; however, the surgery was delayed due to the novel coronavirus disease 2019 (COVID-19) outbreak.

After the initial COVID-19 surge in the United States, we rescheduled the patient's surgery. Notably, the patient did not become pregnant, nor did she develop a sudden headache or altered mental status to suggest apoplexy before our rescheduled surgery date. Before the surgery, we obtained a computed tomography (CT) without contrast with thin cuts through the skull base for approach planning purposes (Figure 1C). The CT was completed 6 months after the previous MRI. The CT revealed hypodensity within the previously-enlarged sella turcica consistent with an "empty sella." There was no mass within the sella turcica. A repeat MRI was obtained that revealed resolution of the bulk of the pituitary adenoma with a thin rim of enhancing tissue at the caudal portion of the sella consistent with pituitary gland or scant residual tumor (Figure 1D, E, and F). We cancelled the patient's surgery and have elected to obtain a repeat MRI in 6 months to inspect for recurrence of the pituitary adenoma.

While pituitary apoplexy can present as a neurosurgical emergency, it can also cause involution of a pituitary adenoma.⁴⁻⁶ This event is not often observed in clinical setting, as most symptomatic pituitary apoplexies warrant neurosurgical

intervention.² In addition, resolution of pituitary masses due to hypophysitis has been described after the administration of high-dose glucocorticoids, but this patient only received physiological cortisol replacement before the procedure.⁷ This case was delayed due to the COVID-19 pandemic, which emphasizes the need for routine imaging surveillance if there is delay in surgical management of a pituitary mass. In the cases of mildly symptomatic pituitary apoplexy, resolution of the pituitary adenoma can obviate the need for surgical intervention.

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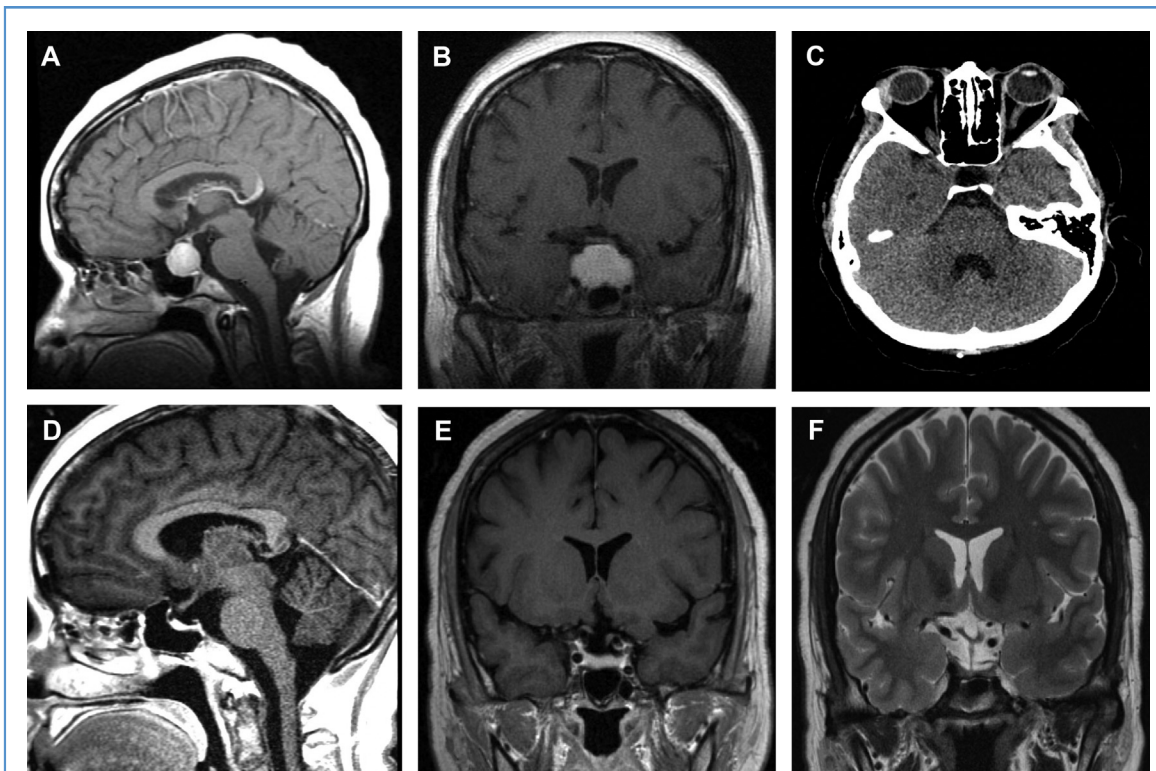


Figure 1. (A and B) Sagittal and coronal plane reformats of magnetic resonance imaging (MRI) brain T1 sequence with gadolinium contrast revealing a large enhancing mass in the sella turcica with Knosp 3A cavernous sinus invasion bilaterally. The mass is avidly enhancing and abuts the optic chiasm. The imaging is most consistent with a pituitary adenoma. (C) Computed tomography of the head without contrast reveals hypodensity within an enlarged sella turcica. The previously

noted pituitary mass is no longer observed. (D and E) Sagittal and coronal plane reformats of MRI brain T1 sequence with gadolinium contrast reveals resolution of the previously noted pituitary adenoma. There is a thin rim of enhancing tissue in the sella consistent with residual pituitary gland or scant tumor. (F) Coronal plane reformat of MRI brain T2 sequence without contrast without contrast.

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