Pituitary Apoplexy in a Prolactinoma & Pregnancy in setting of COVID-19 infection

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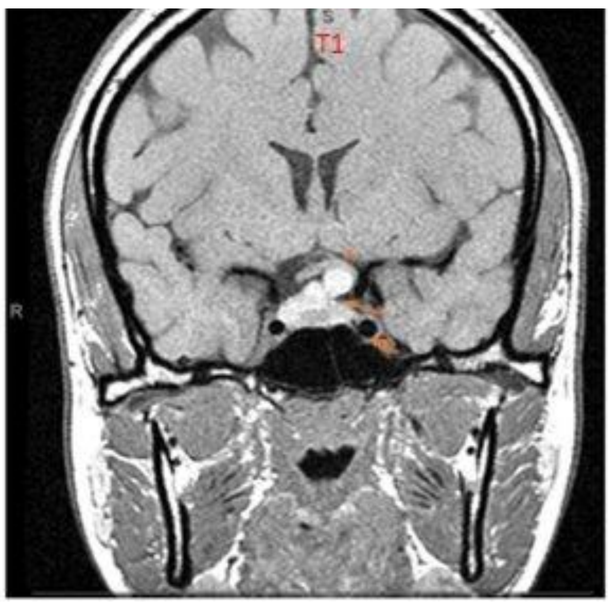
INTRODUCTION

- SARS-CoV-2 (COVID-19) is a devastating pandemic that has claimed innumerable lives, and may result in myriad of clinical manifestations within the endocrine system to those who survive the disease.
- We present an unusual case of pituitary apoplexy in a COVID-19 patient, initially as a microprolactinoma and then progressing to macroprolactinoma during her pregnancy.

CASE PRESENTATION

- A 25-year-old African American female was diagnosed with a microprolactinoma after presenting with elevated PrL levels (157.3 ng/mL) and secondary amenorrhea with an MRI showing pituitary lesion of 0.8 x 0.5 x 0.6 cm with a small focal 3x4x4 mm mass extending into sup rasellar cistern.
- DA therapy (cabergoline 0.25 mg twice weekly) was started. Patient inadvertently got pregnant within 2 months of treatment which led to discontinuance of DA.
- During her 2nd trimester, she had persistent headaches without vision problems. Ophthalmology exam was normal. Repeat MRI showed an enlarged pituitary mass 2.2 x 2.0 x 1.1 cm with mass effect upon left half of optic chiasm and with evidence of internal blood products consistent with pituitary apoplexy. She was likewise found to be COVID-19 positive but was asymptomatic.
- She received stress-dose steroids upon admission. Multi-disciplinary management amongst Neurosurgery, Endocrinology, & Ophthalmology was made to defer surgical intervention and restart cabergoline 0.5 mg twice weekly. Close monitoring was done during pregnancy with improvement of headaches. She delivered a healthy baby girl without complications. Repeat MRI post-partum reveals stable macroadenoma. She continues cabergoline without any symptoms.



MRI of pituitary of patient on 2nd trimester showing enlarged pituitary with mass effect upon left half of optic chiasm, and internal blood products consistent with pituitary apoplexy.

DISCUSSION

- Prolactinoma is the most common secretory pituitary tumors in women of child-bearing age. Risk of enlargement in pregnancy is less in microprolactinomas (2.4%) vs untreated macroprolactinomas (21%). Pituitary apoplexy (PA) is a relatively rare event with an incidence of 2-12% of pituitary adenomas.
- Few case reports are described in literature regarding PA in the context of COVID-19 infection.
- It is still unclear whether COVID-19 co-infection indeed contributed to the enlargement of micro- to macro-prolactinoma and subsequent apoplexy in this case, given the relatively fragile nature of vasculature in the pituitary gland, especially with its physiological enlargement during pregnancy.
- COVID-19 and its widespread systemic manifestations are hypothesized from the ubiquitous expression of ACE-II receptor. This is also found in the pituitary gland and cerebral vascular endothelium.
- COVID-19 could be a plausible precipitating risk factor for pituitary apoplexy since SARS-CoV-2 can induce thrombocytopenia, coagulopathy, and platelet dysfunction, having neural tissue tropism to ACE-II expression in cerebral vascular endothelium.

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