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Pituitary Apoplexy Mimicking a Meningoencephalitis

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INTRODUCTION

- Pituitary apoplexy is a clinical syndrome resulting from infarction or hemorrhage of pituitary adenoma.
- The most common symptoms: headache, visual deficits, ophthalmoplegia, hypopituitarism, fever, and meningism.
- It is a rare and life-threatening medical condition which may require urgent surgical intervention. Unfortunately, it tends to be misdiagnosed as a subarachnoid hemorrhage (SAH) or meningoencephalitis (ME).
- We present a case whose initial clinical picture was suggestive of ME, but instead had pituitary apoplexy. We analyze the similar cases published on PubMed and highlight learning points on how to aid earlier diagnosis and the importance of considering this as a differential diagnosis.

CASE REPORT

Day 1: 85 year-old male presented with a sudden intractable headache for a few hours. Associated with nausea, vomit, neck pain. Denied fever, chills, vision change, photophobia, weakness, or paresthesia. Vitals stable, no focal neurologic deficits. Labs unremarkable. CTH revealed no acute intracranial hemorrhage or infarct; prominent pituitary, concerning for pituitary adenoma.

Day 2: Fever (103°F), leukocytosis (12.4), photophobia, blurred vision, and ophthalmoplegia. Lumbar puncture (LP) showed clear CSF, opening pressure (OP) 5.5, WBC 45 with 91% neutrophils, RBC 20, elevated protein 69.8 and glucose 76. IV ceftriaxone, vancomycin, ampicillin, and acyclovir were started after LP for suspicious ME.

Days 3-10: CSF cultures and ME panel came back negative. Patient’s condition declined with worsening neurological deficits and electrolyte disturbances, including lethargy, visual field deficit, photophobia, hypotension, hypoglycemia, hyponatremia, and hypopituitarism (decreased levels of TSH, FT4, ACTH, Cortisol, Prolactin, IGF-1, LH, and Testosterone).

Day 11: MRI brain (Figure 1) showed pituitary apoplexy.

Day 12-28: Patient’s condition improved after hormone replacement therapy (hydrocortisone and synthroid) and transsphenoidal decompression.

Pathology (Figure 2) showed pituitary adenoma tissue with necrosis and hemorrhage.

LITERATURE REVIEW

To date, 21 cases of pituitary apoplexy mimicking ME have been reported on PubMed since the year of 2000.

CSF FEATURES IN THESE CASES:

- Neutrophil predominant pleocytosis in 100% cases (14/14);
- WBC < 1000/ul in 86% cases (12/14);
- RBC exists in 93% cases (13/14);
- Elevated protein in 100% cases (14/14): 69.8 ~ 239 mg/dl;
- Glucose level varies: 12 ~ 136 mg/dl, but > 40 mg/dl in 73% cases (8/11)

CONCLUSION

- Meningism could be major clinical manifestation of pituitary apoplexy. In this condition, CSF pleocytosis, erythrocytes, and elevated protein may be present, which could be confused with SAH and infectious ME.
- Consider pituitary apoplexy as a differential diagnosis in these cases, especially when the patient is found with sudden headache, endocrine dysfunction, vision symptoms, or sellar/suprasellar lesion on neuroimages (CT, MRI).
- MRI is the gold standard for preoperative diagnosis. Sensitivity is reported of 91%; 94.4% (17/18) in our study.
- Rapid and early diagnosis allows for aggressive endocrine management and surgical decompression, which decreases mortality and morbidity rates from 100% to 6.7%.

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