Pituitary Apoplexy Mimicking a Meningoencephalitis.

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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 (103F), 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.

Days 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.

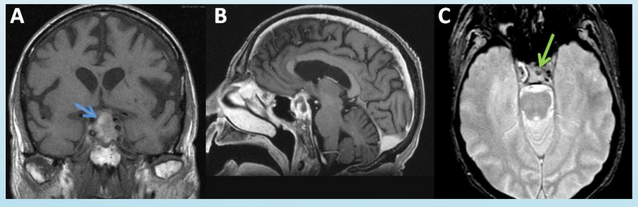

Figure 1. MRI findings are consistent with subacute pituitary hemorrhage, including peripheral hyperintensity (blue arrow) on coronal T1 sequence (A), rim enhancement on sagittal post-gadolinium sequence (B), and hypointensity (green arrow) on axial gradient echo sequence (C)

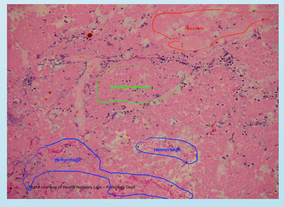

Figure 2. Pathology showed pituitary adenoma with extensive necrosis, hemorrhage, and hemosiderin deposition

LITERATURE REVIEW

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

CSF	1	2	3	4	5	6	7	8	9	10	11	12	13	14
OP	5.5	17.5				22	26					26.5		
WBC	45	580	13	426	174	986	140	908	500	70	110	260	2,408	2,200
PMN%	91	84	73	predo	predo	97	95	90	93	95	90	88	98	90
RCB	20		2,330		53	0*	40	124	22	25	15	290		
Protein	69.8	153.4	90	90	100	239	80	119	85	80	90	87	113	
Glucose	76	136	70		61.3	12	64.9		45	36	39.6	57	51	

* xanthochromic cerebrospinal fluid (CSF)

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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