

CLINICAL VIGNETTE

Case Report: Pituitary Apoplexy

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Case Report

A 64-year-old with no past medical history presented to the emergency medicine department with 24 hours of left eye diplopia, blurry vision and ptosis. Prior to this presentation, he reported 3 weeks of constant excruciating occipital headaches not alleviated by ibuprofen. Patient denied any focal weakness, sensory changes, fevers or vomiting. There was also no report of weight loss, skin changes, recent travel or head injury.

On initial presentation, his vital signs were normal. On his HEENT exam, he exhibited left eye ptosis with a 6mm dilated but minimally reactive left pupil. The right pupil

was 3mm and strongly reactive to light. Visual acuity was 20/70 on the right and 20/100 on the left. Extra-ocular movements were intact on the right but the patient could not adduct, look superiorly or inferiorly on the left. Other cranial nerves were intact. The rest of the neurological and physical exam was normal.

An initial non-contrast CT scan of the head was unrevealing. An emergent MRI of the brain and brainstem showed 1.7x2cm pituitary mass with a subacute hemorrhagic component and compression of left cavernous sinus (figure 1).

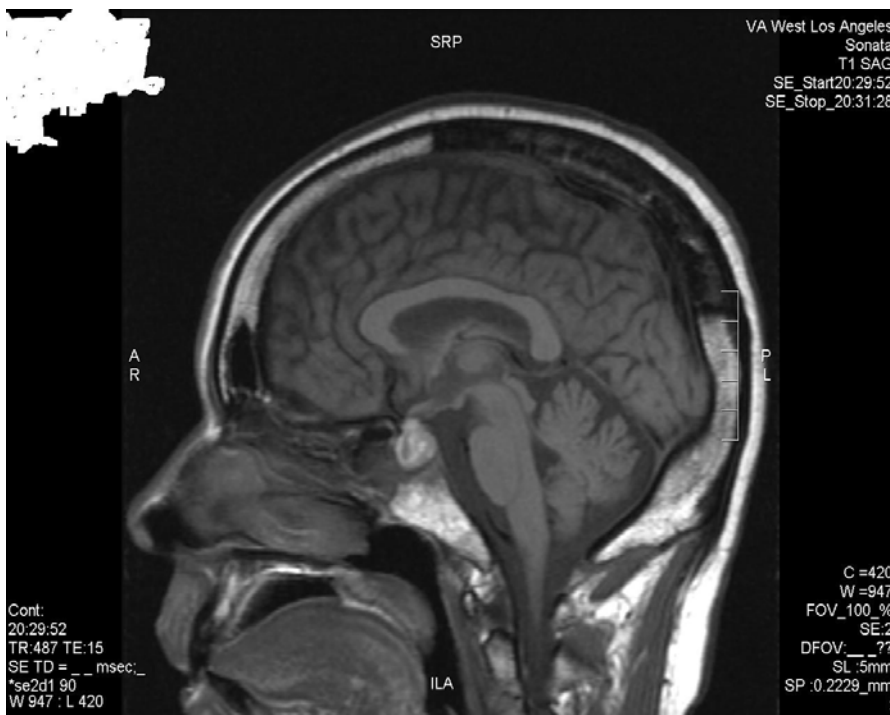


Figure 1

The patient's symptoms were consistent with a newly diagnosed pituitary adenoma

with acute left 3rd nerve palsy secondary to pituitary apoplexy. Neurosurgery service

was consulted and patient had an emergent transphenoidal pituitary resection. Pt subsequently developed panhypopituitarism after the surgery but the symptoms of headaches and visual findings resolved over the next few weeks. Patient is currently maintained on hydrocortisone and levothyroxine and is doing well.

Discussion

Pituitary apoplexy is an uncommon but life-threatening condition that presents with visual changes, headaches and ophthalmoplegia from the sudden and acute onset of pituitary hemorrhage. The age range for patients with pituitary apoplexy ranges from the first to the ninth decade peaking in the 5th decade^{1,2}. Most cases of apoplexy has been showed to occur in patients with undiagnosed pituitary adenoma. In these patients, an episode of apoplexy is the initial presentation of pituitary adenoma. All tumor types and sizes of adenomas are susceptible to apoplexy in contrast to earlier studies that suggested that macroadenomas were the most susceptible^{2,3}.

Most patients have some degree of visual changes from compression of cranial nerves III, IV, V and VI either unilaterally or bilaterally. Various degrees of ophthalmoplegia, papillary defects and ptosis are observed from mass effect from an enlarging hematoma. Cranial nerve III is particularly susceptible to expanding hemorrhage from pituitary apoplexy because of its location in the lateral aspect of the cavernous sinus, traveling at the level of the pituitary gland^{4,5}.

Some of the proposed risk factors for apoplexy include head injury, estrogen use, anticoagulation, pregnancy and use of bromocriptine to treat pituitary adenoma⁶. The reasons for the above associations with apoplexy are unclear. Therefore, the pathophysiology of pituitary apoplexy remains largely unclear. However, some authorities suggest that an adenoma that rapidly expands can outstrip its blood supply

leading to infarct and hemorrhage. Others believe that compression of the pituitary stalk by an enlarging mass can compromise pituitary blood flow resulting in hemorrhage^{3,7}.

In the emergency department, diagnosis of pituitary apoplexy can be extremely difficult to establish and usually made when ruling out other potential pathologies such as meningitis, subarachnoid hemorrhage and cavernous sinus thrombosis.

The imaging modality of choice for diagnosis is MRI because it demonstrates pituitary infarction and hemorrhage as well as compression of structures around the pituitary⁸. A CT scan can miss this diagnosis as was evident in the patient featured in this case report

Pituitary apoplexy is an emergency that requires immediate attention and medical stabilization. Most patients will have some stage of pituitary hypofunction. Patients should have immediate assessment of electrolytes and pituitary hormones. The most significant and potentially life threatening is acute adrenal suppression from lack of adrenocorticotrophic hormone from the hemorrhage within the pituitary. This is seen in two-thirds of patients presenting with apoplexy. In the emergency department, patients will require immediate treatment with high-dose corticosteroids^{9, 10, 11}.

Transphenoidal approach for decompression is the current definitive surgery for pituitary apoplexy especially in patients in a coma or with progressive and worsening symptoms. Visual loss can sometimes be reversible if neurosurgical decompression occurs early in the clinical course of treatment. However, some advocate conservative management with medical therapy alone, delays in relieving compression on the cranial nerves controlling vision may affect visual outcomes^{8, 12}.

This case report shows that even severely compromised vision can be successfully restored with early recognition and diagnosis of pituitary apoplexy leading to early surgical decompression. Therefore, there is the need to create awareness amongst physicians about the potential to salvage and reverse visual loss if early transphenoidal decompression is considered.

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