

# Pituitary Apoplexy Resulting in Massive Bilateral Strokes and Brain Death

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## Objective

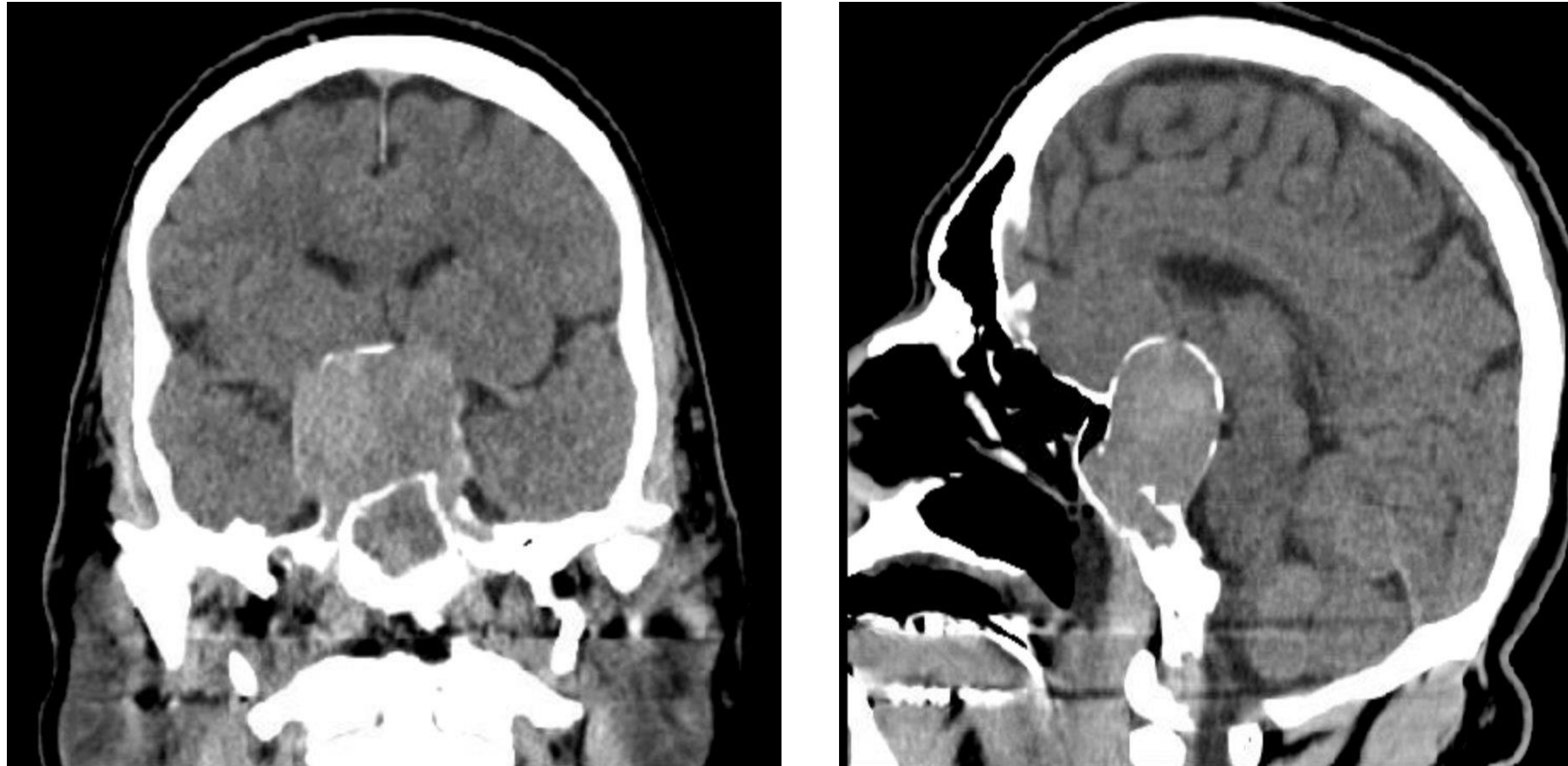
We present an unusual case of pituitary apoplexy causing immediate vision loss and rapid decline of neurologic exam due to massive bilateral ICA territory stroke. Our discussion focuses on decision-making regarding diagnosis and potential treatment in this difficult case.

## Introduction

- Pituitary apoplexy (PA) is an uncommon but life-threatening condition resulting from sudden expansion of a pituitary tumor due to infarction and/or hemorrhage.
- The incidence of PA is 0.6%-9% and radiological imaging is paramount for timely diagnosis and surgical intervention.
- Most often associated with pituitary macroadenomas, clinical symptoms include decrease or loss of vision, headaches, and cavernous sinus syndrome.
- Cerebral infarction following PA is rare, reported in very few cases in literature.

## Illustrative Case

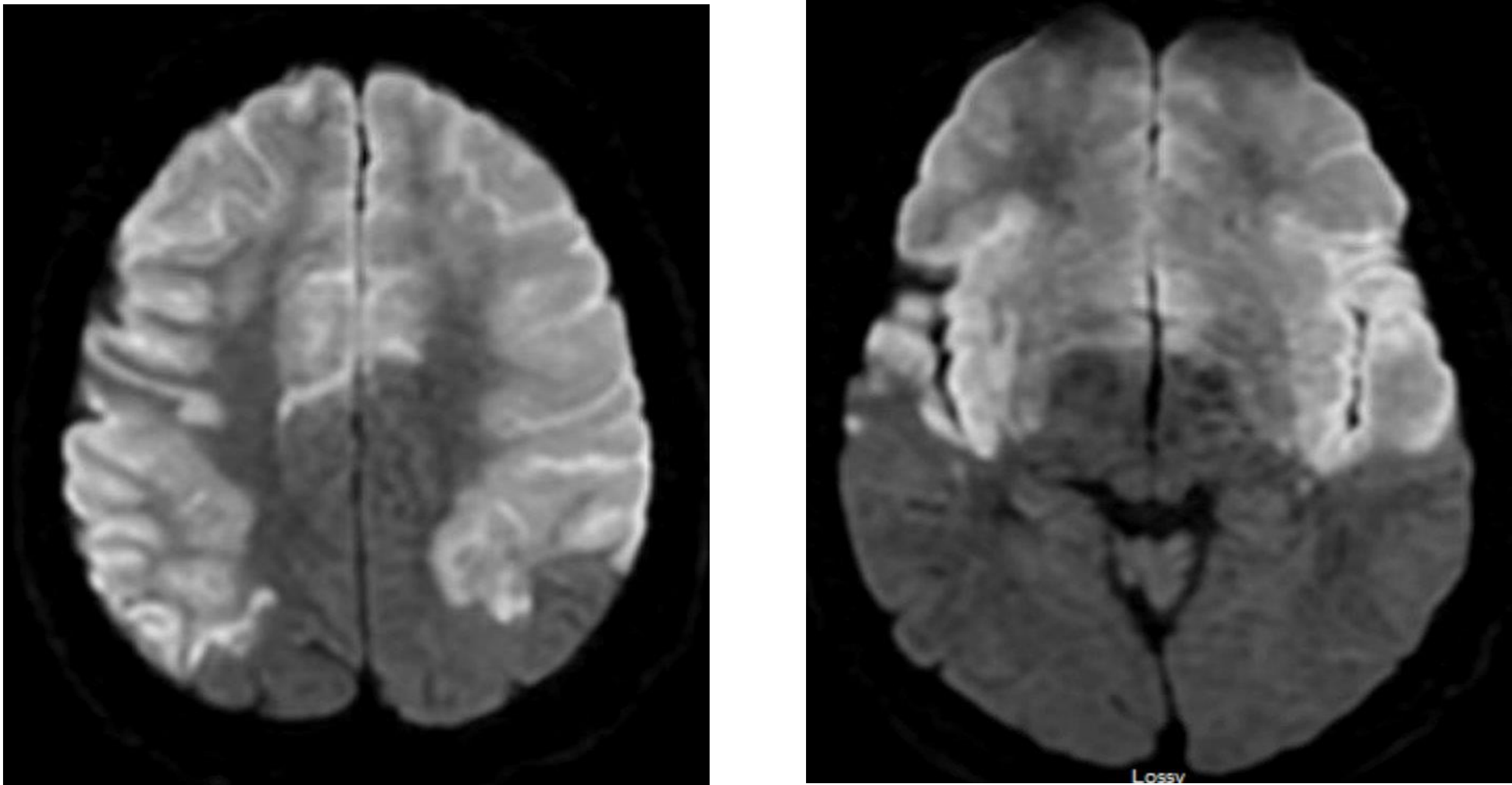
- A 55-year-old previously healthy male presented to our institution for evaluation after experiencing acute vision loss and loss of consciousness.
- Initial examination revealed the patient had bilaterally fixed and dilated pupils and extensor posturing.
- CT revealed a large hemorrhagic pituitary mass with suprasellar and lateral extension, loss of gray and white matter differentiation, and diffuse cerebral edema in the anterior, parietal, and temporal lobes (Figure 1).
- MRI revealed extensive bilateral infarcts in the MCA and ACA distribution (Figure 2). CT angiogram showed compression and near occlusion of the right clinoidal ICA and similar narrowing on the left side (Figure 3).



**Figure 1.** Coronal (left) and sagittal (right) non- contrast CT images

## Results

Given the devastating neurologic exam and massive bilateral infarcts, no surgical intervention was offered, and the patient was declared brain dead 2 days later.



**Figure 2.** MRI showing bilateral infarcts in the ACA and MCA territories



**Figure 3.** CT angiogram showing bilateral ICA involvement.

## Discussion

- Cerebral infarction secondary to pituitary apoplexy is a rare complication, which requires emergent treatment.
- Infarction secondary to pituitary apoplexy is thought to occur from compression of the ICA by the expanding tumor, or through vasospasm as a result of vasoactive substances released from the tumor.
- MRI and cerebral angiography findings should be utilized early for suspected Pas to identify possible occlusion/ compression of the ICAs.
- Identification of vascular compression of the ICA in a PA should be urgently treated with surgical decompression. This is imperative especially in cases of serious and progressive neurologic symptoms.

## Conclusions

This case highlights an unfortunate complication of pituitary apoplexy – compression and possible inflammatory-mediated vasospasm of clinoidal ICAs resulting in devastating bilateral ischemic strokes. We present a patient that had an atypical presentation for PA and obtaining imaging to better understand the etiology of the patient’s neurologic status is paramount in medical and surgical decision-making.

## Contact

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