

Delayed Diagnosis of Hemorrhagic Stroke Contributing to Secondary Intracranial Injury: A Case Report

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SETTING: Inpatient acute rehabilitation

PATIENT:

- A 54-year-old male with PMH of bipolar depression, schizophrenia, hepatitis C, and polysubstance abuse who suffered a subarachnoid hemorrhage secondary to ruptured anterior communicating artery (ACOM) aneurysm and traumatic brain injury (TBI).

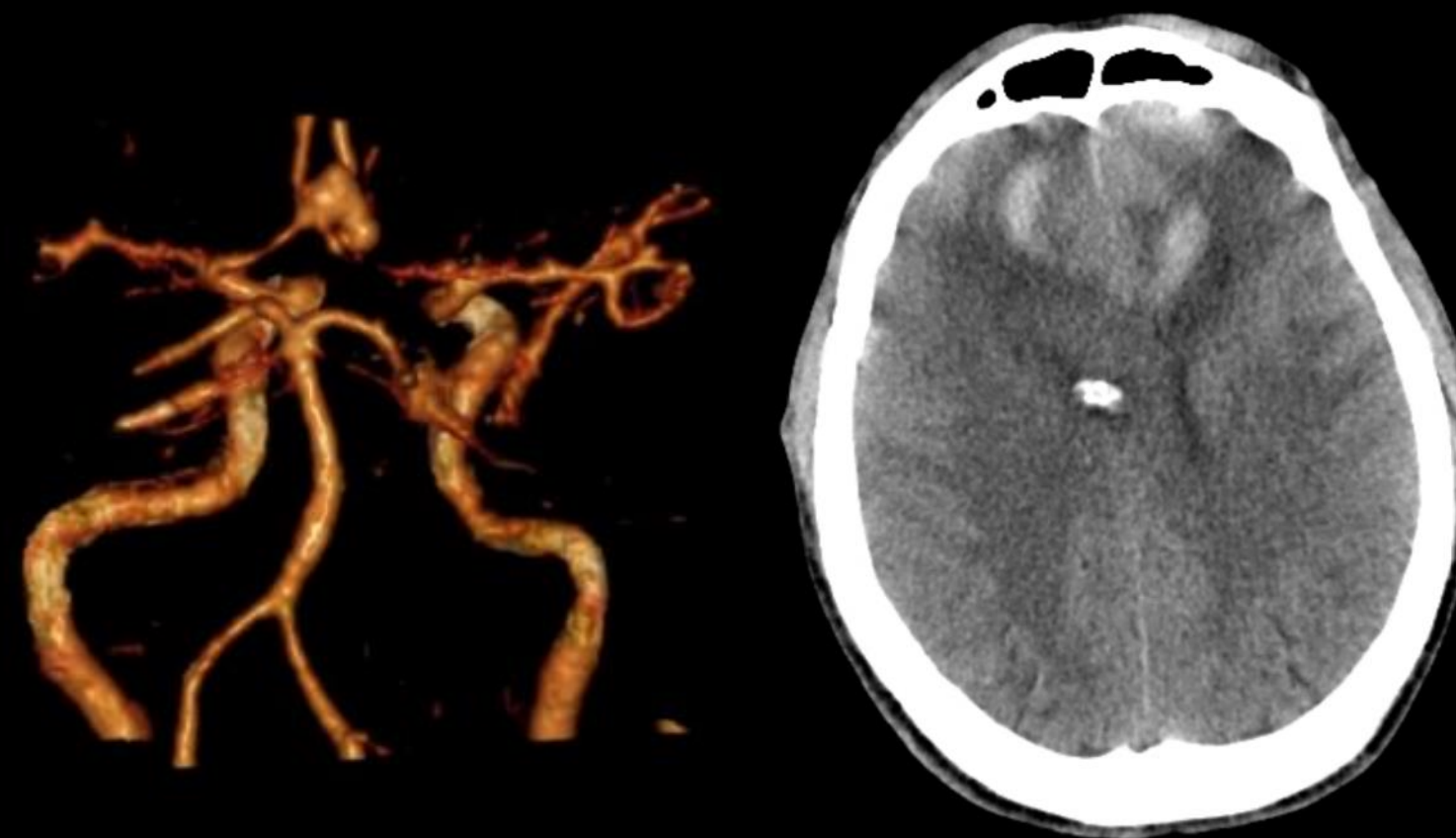
CASE DESCRIPTION:

- The patient initially presented to emergency department (ED) with “the worst headache of [his] life” though was discharged home the same day.
- Unfortunately, he attempted to self-treat with methamphetamines and was arrested 3 days later for illicit drug use.
- His headache persisted in jail at which time he began to repeatedly hit his head against a wall, resulting in altered mental status. He was transported from jail for emergency medical care.
- Initial imaging revealed bifrontal hemorrhagic contusions as well as subarachnoid and intraventricular hemorrhages (SAH/IVH) with cerebral edema causing subfalcine herniation and midline shift.
- He had minimal improvement in neuro status at initial facility and was transferred to a higher level of care a few days later.
- Cerebral angiogram revealed ruptured ACOM aneurysm for which patient eventually underwent orbital craniotomy and clip ligation.
- Acute hospital course was complicated by agitation/restlessness, hyponatremia secondary to CSW, urinary retention, PEG placement, and fall without injury.
- He was ultimately transferred to acute inpatient rehabilitation for comprehensive therapies, where he participated for about 2 weeks before discharging to a SNF for further care and therapies.

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A comprehensive patient history with broad differential diagnosis can help with early diagnosis and avoidance of poor outcomes.



Patient's imaging demonstrates multilobulated 1 cm anterior communicating artery aneurysm, small 2 mm right M1 bifurcation aneurysm, small irregular vessels within the carotid circulation from vasospasm.

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DISCUSSION:

- The clinical presentation of SAH is broad, ranging from simple headaches to focal neurological deficits. Initial workup typically includes a head CT, though some studies show CT may be less sensitive with “minor leaks” or normal neurological status on exam. The consequences of missed diagnosis are high, resulting in poor clinical outcomes. In this case, the patient's initial headache, likely attributed to SAH, may have been overlooked given psychiatric history and substance use. His case was further complicated by the fact that he also now had head trauma from repeatedly hitting his head for this continued headache. The social factors involved likely lead to a significant delay in diagnosis in a patient whose case could have potentially had a better outcome. Multiple studies evaluated missed or delayed diagnosis of SAH with mortality rates of 6-17%, and severe morbidity and disability rates of 22-37%. Factors that contribute to poor clinical outcome include age > 65, worse JCS (Japan Coma Scale), re-rupture after initial misdiagnosis, and nonsurgical intervention.

CONCLUSION:

- This case highlights the importance of comprehensive patient history and broad differential diagnosis. While there may be multiple confounding factors, thorough evaluation can help guide work-up leading to earlier diagnosis and avoid poor outcomes. The differential diagnosis for headaches should remain broad and when it includes SAH, prompt imaging and further evaluation should be completed. In this case, diagnosis was delayed and resulted in additional insult to this patient's brain.