

Brain Tangle Alert : The Seizure You Didn't See Coming!

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INTRODUCTION

Arteriovenous malformations (AVM) are rare vascular anomalies and important differential in refractory seizures. They consist of abnormal tangles of blood vessels that disrupt normal brain function which presented as seizures.

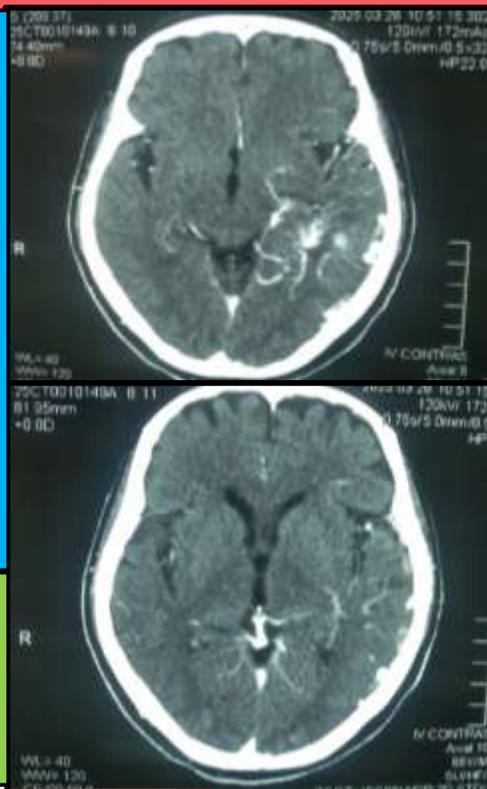


CASE DESCRIPTION

60-year-old man presented to Emergency Department with ongoing *Generalized Tonic-clonic Seizures* unresponsive to IV diazepam 5mg administered by paramedics. Seizures persisted despite additional IV diazepam and Phenytoin. He was *unresponsive (GCS E4V1M1)*, *febrile (40°C)*, *tachycardic (HR 150)*, *DXT 6.8mmol/L eventually developed stridor*. Initial ABG reveals severe metabolic acidosis (*pH 7.02*), *hypercapnia (PCO₂ 56 mmHg)*, and *elevated lactate (20.0 mmol/L)*. He was resuscitated with fluids Normal Saline boluses and Noradrenaline, intubated for airway protection which improved parameters (*pH 7.41, PCO₂ 26 mmHg, lactate 8.5 mmol/L*). An initial non-contrast CT brain was not performed due to the patient's unstable condition. Following intubation and hemodynamic stabilization, an urgent Contrast-Enhanced CT (CECT) brain was done which reveals **Left Posterior Temporal Arteriovenous Malformation (AVM)** likely causing refractory seizures. Neurosurgical team was on-board for further evaluation and management.

DISCUSSION

AVMs are uncommon cause of seizures making diagnosis challenging. CECT is crucial to identify structural causes like AVM which might be underlying cause of refractory seizures. Without CECT Brain, causes of refractory seizure could remain undiagnosed resulting in ineffective treatment. Furthermore, severe metabolic derangements such as **acidosis**, **hypercapnia**, **elevated lactated** worsens neuronal functions and causes difficulty controlling seizure. **Hemodynamic instability** such as hypotension and tachycardia further compromises cerebral perfusion leading to hypoxia. Prompt resuscitation with IV fluids, noradrenaline, and intubation for airway protection is essential to reverse these effects preventing secondary brain injury



CONCLUSION

AVM should be considered in refractory seizures. **Early stabilization of blood abnormalities & haemodynamic instability** followed by CECT imaging are key to identifying the underlying cause and guiding timely management.

Key Word : Arteriovenous Malformation (AVM) seizure Contrast Enhanced Computed Tomography brain (CECT), Refractory Seizures



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