

Neuroimaging Highlight

Progressive Thrombosis of a Dolicho-Basilar Artery and Fusiform Aneurysm Resulting in Diffuse Ischemic and Hemorrhagic Complications

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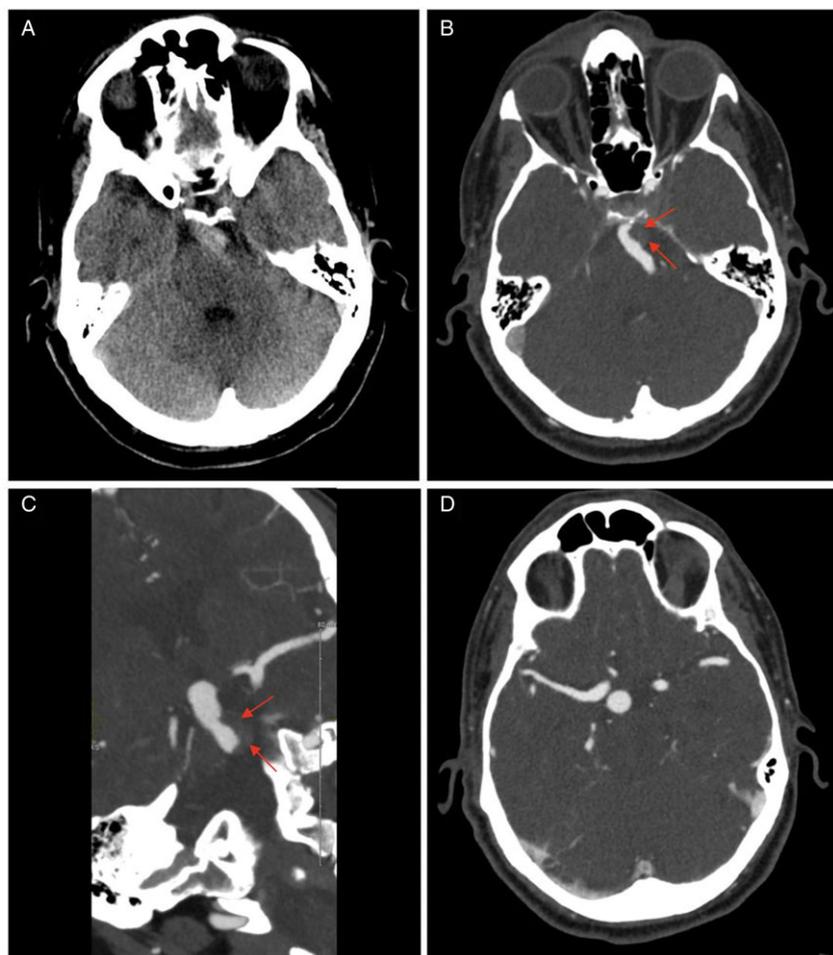


Figure 1. (A) Unenhanced CT: tortuous fusiform dilatation of the mid-basilar segment with hyperdense mural thrombus; (B) Computed Tomography Angiogram (CTA), axial plane: fusiform dolichoectatic basilar artery, red arrows on thrombus; (C) CTA, coronal plane: dolichoectatic basilar artery, red arrows on thrombus, and (D) patent basilar tip.

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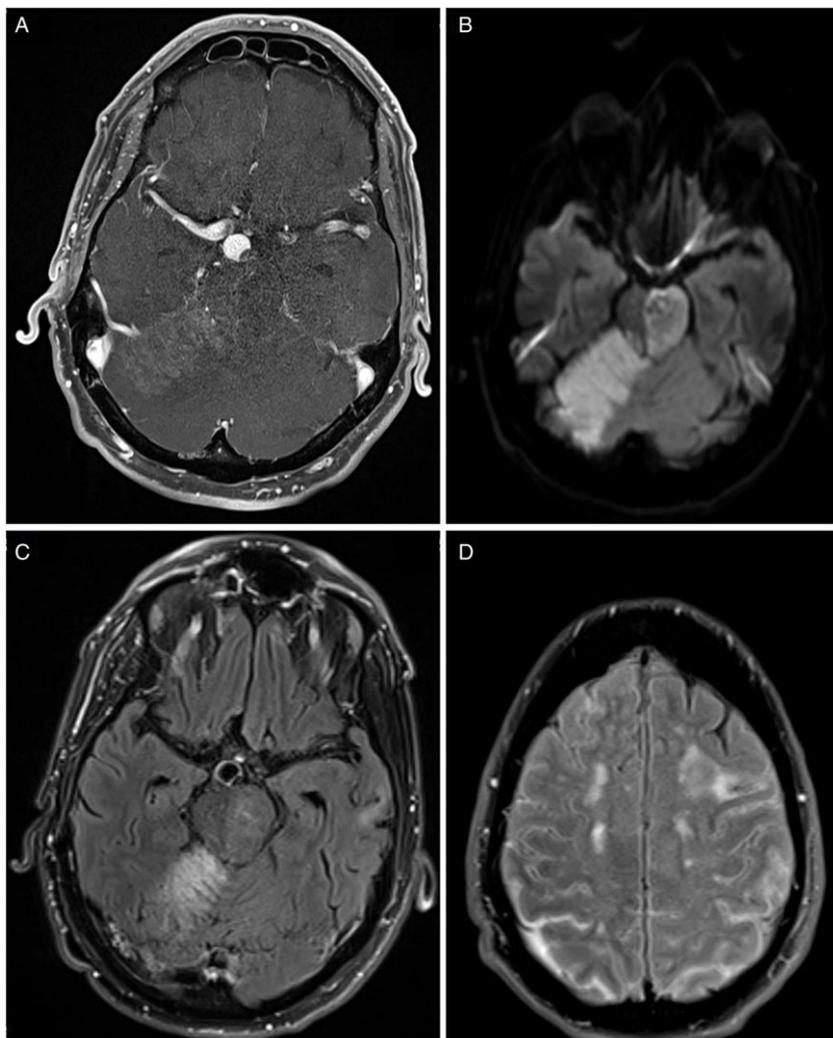


Figure 2. MRI (A) Longitudinal relaxation time (T1)-Volumetric interpolated breath-hold examination (VIBE) post contrast demonstrated interval progression of thrombus to distal basilar artery segment compared to CTA performed 2 days earlier, despite thrombolysis; (B) DWI: acute pontocerebellar infarcts; (C) Fluid-attenuated inversion recovery (FLAIR) post contrast: basilar artery wall circumferential mural enhancement (inflammation versus slow flow), and (D) acute subarachnoid hemorrhage.

A 54-year-old male presented acutely with dense right-sided hemiplegia and dysarthria (NIHSS 12). Initial CT angiogram revealed diffuse intracranial dolichoectasia with fusiform vertebrobasilar circulation and a partially occlusive basilar artery thrombus (Figure 1). He was treated with Tenecteplase but did not undergo endovascular treatment (EVT) given its lack of evidence in dolichoectasia. He aspirated vomitus and was intubated. MRI angiogram 24 hours later showed progression of the mural thrombosis of the distal basilar artery, infarction secondary to basilar artery perforators and right superior cerebellar artery occlusions,¹ cortical subarachnoid hemorrhage and basilar artery wall enhancement (Figure 2). This patient died secondary to brainstem damage. Outcomes associated with vertebrobasilar dolichoectasia and fusiform aneurysms are potentially catastrophic. Consensus surrounding acute management is lacking. There is limited evidence for thrombolysis, and EVT is technically challenging with high complication rates,² highlighting the need for further research to better understand effects on prognosis.

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