

# Teaching NeuroImages: Severe vasospasm in traumatic brain injury

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A 45-year-old man had a severe traumatic brain injury (TBI) with multicompartamental hemorrhages (figure 1). He was initially noted to be awake and following commands with his right side. Two weeks later, his examination deteriorated to coma with flaccid quadriplegia. Initial workup, including EEG, was unrevealing. MRI brain showed new multiterritorial infarcts (figure 1); a catheter-based angiogram confirmed severe vasospasm in several large vessels (figure 2).

Vasospasm following TBI has been previously described as underrecognized because it is often clinically silent, and typically occurring in the first several days when symptomatic.<sup>1,2</sup> Late and extreme cases, as above, are rarely described.

#### AUTHOR CONTRIBUTIONS

Dr. Reznik: study design, analysis/interpretation of the data, drafting/ revising the manuscript. Dr. Saeed: analysis/interpretation of the data,

revising the manuscript. Dr. Shutter: study design, analysis/interpretation of the data.

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#### DISCLOSURE

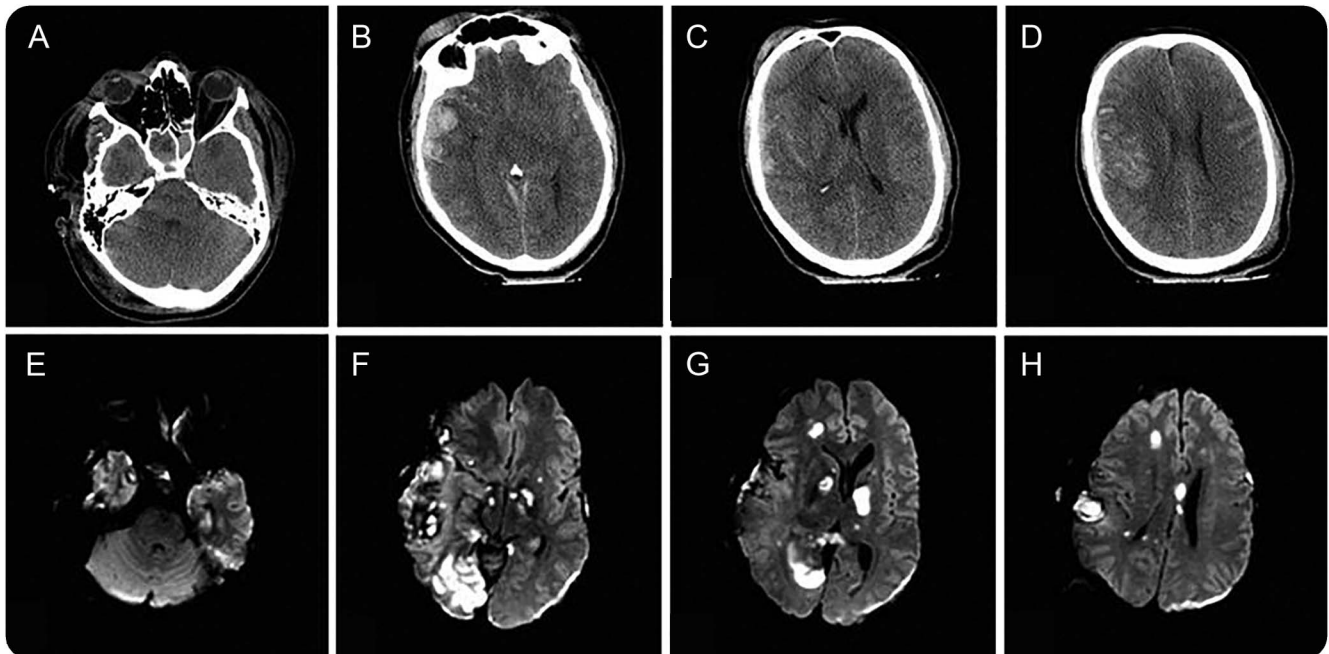
The authors report no disclosures relevant to the manuscript. Go to Neurology.org for full disclosures.

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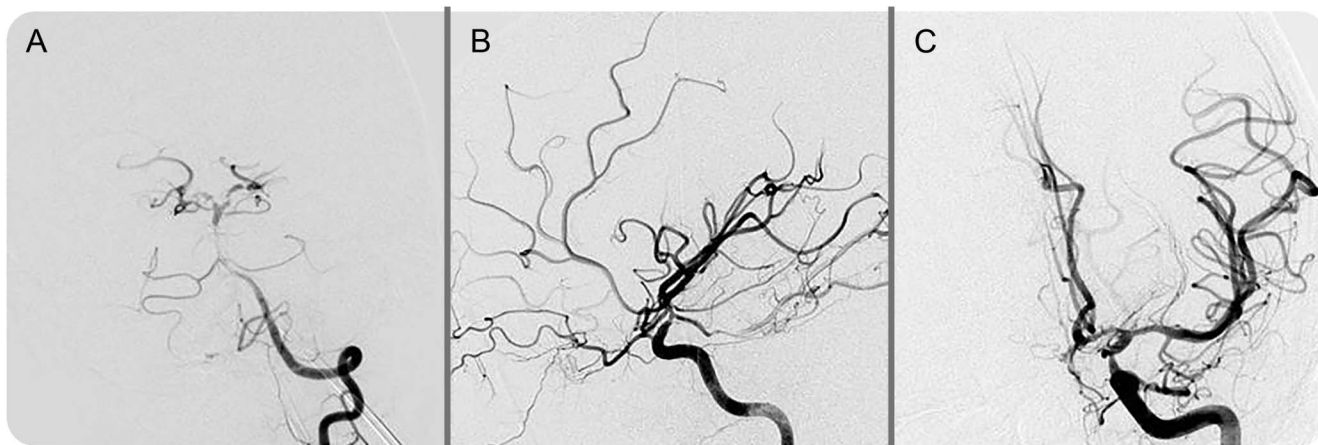
**Figure 1** CT head and MRI brain



Admission head CT shows right temporal contusion (B–C) with bilateral subarachnoid hemorrhage (B–D). Axial diffusion-weighted imaging 2 weeks later shows new infarcts in the right frontal lobe (G and H), bilateral deep nuclei and splenium of the corpus callosum (G), and right occipital lobe (F and G), while sparing the brainstem (E); prior right temporal contusion, subdural and subarachnoid hemorrhages, and areas of axonal injury are also noted.

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**Figure 2** Cerebral angiogram



Catheter-based angiogram shows severe vasospasm of the basilar (A), bilateral posterior cerebral (A), right internal carotid (B), and left internal carotid arteries (C).