Real-time Imaging of Aneurysmal Rupture Causing an Isolated Acute Subdural Hematoma

Author(s):
Christopher Hong, MD; Daniela Renedo, MD; Nanthiya Sujijantarat, MD; Andrew Koo, MD; Guido J. Falcone, MD; Ajay Malhotra, MD; Nils H. Petersen, MD; Charles Matouk, MD

Corresponding Author:
Charles Matouk
charles.matouk@yale.edu

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A 51-year-old woman with hypertension presented with a 3-week history of progressive, right cranial nerve III palsy and headache. During her emergency department evaluation and while in the MRI scanner, she became acutely unresponsive. MRI captured a rapidly expanding acute subdural hematoma (aSDH) (Figure 1). She was emergently taken for decompressive craniectomy. Post-operative imaging demonstrated a ruptured right-sided posterior communicating artery aneurysm.

Isolated aSDH from aneurysmal rupture has previously been reported, but remains underappreciated.\textsuperscript{1,2} Given the dynamic documentation with brain MRI, this case uniquely captures the real-time rupture of an aneurysm directly into the subdural space without associated subarachnoid or intracerebral hemorrhage.

**FIGURE LEGEND**

**Figure 1. Peri-operative imaging.** (A) Normal MRI (localizer) prior to aneurysmal rupture. (B) T2-weighted MRI (axial) showed rapid aSDH enlargement over 5 and (C) 11 minutes into MRI acquisition. (D) Post-craniectomy CT (coronal) showed subtemporal aSDH extension. (E) CTA (coronal) and (F) cerebral angiogram (AP) demonstrated a ruptured posterior communicating artery aneurysm.
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