Ruptured Cerebral Aneurysms Presenting as Acute Subdural Hematoma

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Purpose
Acute subdural hematoma secondary to a ruptured cerebral aneurysm is uncommon and has not been emphasized. Emergent cerebral angiogram is usually not a routine procedure for a patient with acute subdural hematoma. We present four patients with acute subdural hematoma without apparent subarachnoid hemorrhage in whom the cerebral angiogram revealed a ruptured cerebral aneurysm.

Materials & Methods
Four patients presented to the emergency room with headache and mental status change. There was no history of trauma. Head CT revealed acute subdural hematoma without apparent subarachnoid hemorrhage. All patients underwent emergent cerebral angiogram followed by craniotomy for clipping of the aneurysms.

Results
Case 1: Head CT shows an acute subdural hematoma layering along the right tentorium. Angiogram revealed a lobular aneurysm at the right internal carotid artery near the origin of the superior hypophyseal artery. Case 2: Head CT demonstrates an acute right-sided subdural hematoma. The angiogram shows a large aneurysm at the anterior communicating artery. A second small aneurysm is seen at the bifurcation of right middle cerebral artery. Case 3: Head CT shows an acute right-sided subdural hematoma. Angiogram reveals an irregular aneurysm at the bifurcation of right middle cerebral artery. A second aneurysm is noted at the bifurcation of left middle cerebral artery. Case 4: Head CT demonstrates an acute left-sided subdural hematoma. The angiogram reveals an aneurysm at the posterior communicating artery.

Conclusion
Ruptured cerebral aneurysm presenting as acute subdural hematoma without subarachnoid hemorrhage is uncommon. However, the subdural space has been considered the second most common site for ruptured aneurysm. It has been postulated that the aneurysm adheres to the arachnoid membrane and the dura during subclinical episodes of bleeding and subsequently ruptures, and the hemorrhage dissects into the subdural space. Emergent cerebral angiogram should be part of the algorithm for patients who present with nontraumatic acute subdural hematoma.