

## Answer to Medical Quiz: Images

1. Pontine hemorrhage with Subarachnoid extension(Fig :1), Subarachnoid hemorrhage at pre-pontine cistern, due to aneurysm of basilar artery(Fig:2)
2. Digital subtraction angiography

### Subarachnoid Hemorrhage

The term subarachnoid hemorrhage (SAH) refers to extravasation of blood into the subarachnoid space between the pial and arachnoid membranes. SAH constitutes half of all spontaneous atraumatic intracranial hemorrhages; the other half consists of bleeding that occurs within the brain parenchyma. Subarachnoid hemorrhage occurs in various clinical contexts, the most common being head trauma. However, the familiar use of the term SAH refers to nontraumatic (or spontaneous) hemorrhage, which usually occurs in the setting of a ruptured cerebral aneurysm or arteriovenous malformation (AVM).

Intracranial saccular aneurysms (“berry aneurysms”) represent the most common etiology of nontraumatic SAH; about 80% of cases of SAH result from ruptured aneurysms. Unfortunately, the difficulties in detecting unruptured aneurysms in asymptomatic patients practically preclude the possibility of preventing most

instances of SAH. About 6-8% of all strokes are caused by SAH from ruptured berry aneurysms.

The history and physical examination, especially the neurologic examination, are essential components in the diagnosis and clinical staging of SAH. The diagnosis is confirmed radiologically via urgent computed tomography (CT) scan without contrast. Traditionally, a negative CT scan is followed with lumbar puncture. However, noncontrast CT followed by CT angiography (CTA) of the brain can rule out SAH with greater than 99% sensitivity.<sup>1</sup>

Current treatment recommendations involve management in an intensive care unit setting. The blood pressure is maintained with consideration of the patient’s neurologic status, and additional medical management is directed toward the prevention and treatment of complications. Surgical treatment to prevent rebleeding consists of clipping the ruptured berry aneurysm.<sup>2</sup>

### References

1. McCormack RF, Hutson A. Can computed tomography angiography of the brain replace lumbar puncture in the evaluation of acute-onset headache after a negative noncontrast cranial computed tomography scan. *Acad Emerg Med.* 2010 Apr. 17(4):444-51.
2. Marden FA, Roy SS. Endovascular management of intracerebral and subarachnoid hemorrhage. *Curr Treat Options Cardiovasc Med.* 2005 Jul. 7(3):197-209.