70 y/o F presents with headache

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Subarachnoid hemorrhage

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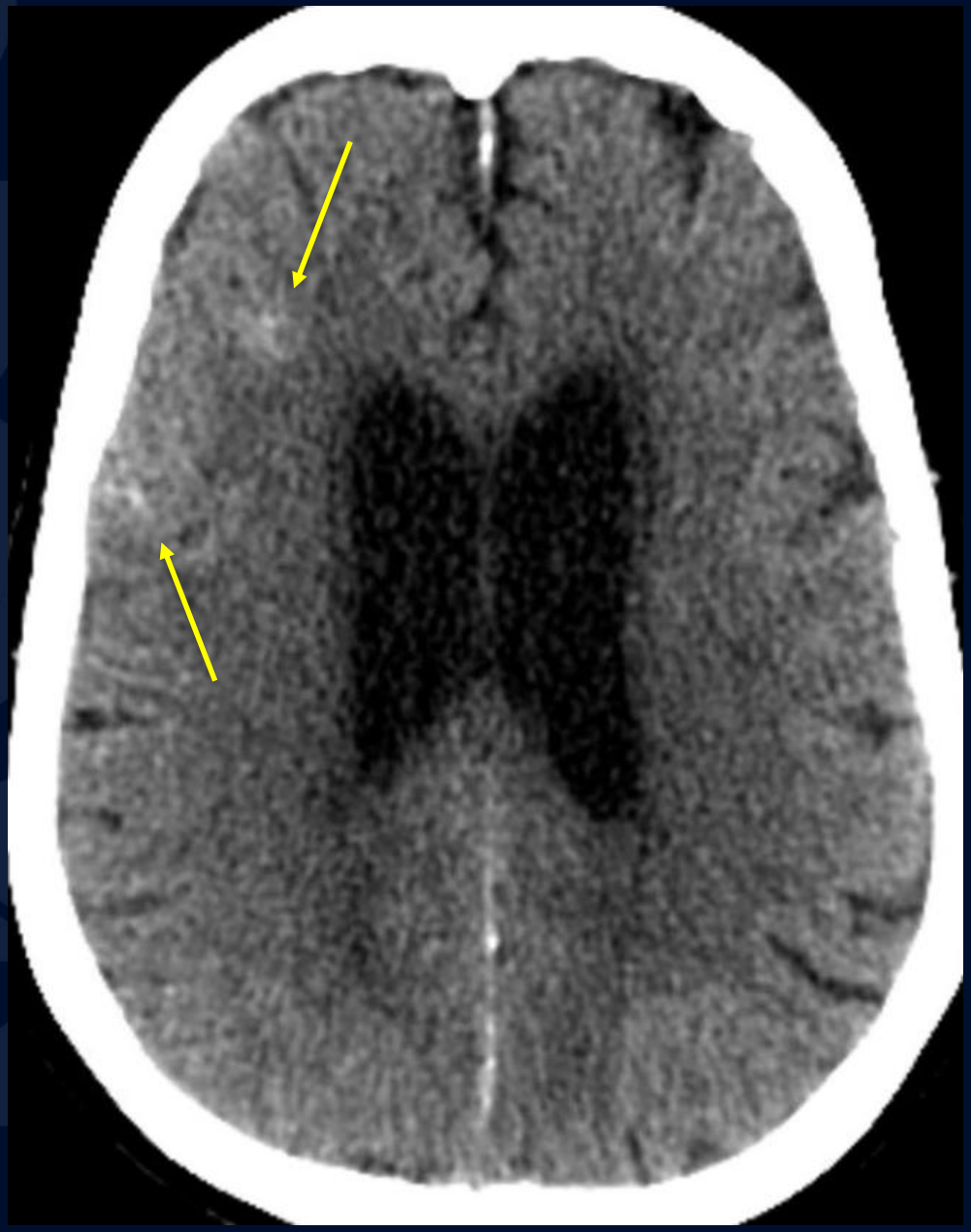

Axial NECT shows small foci of hemorrhage in the sulci of the right cerebral convexity

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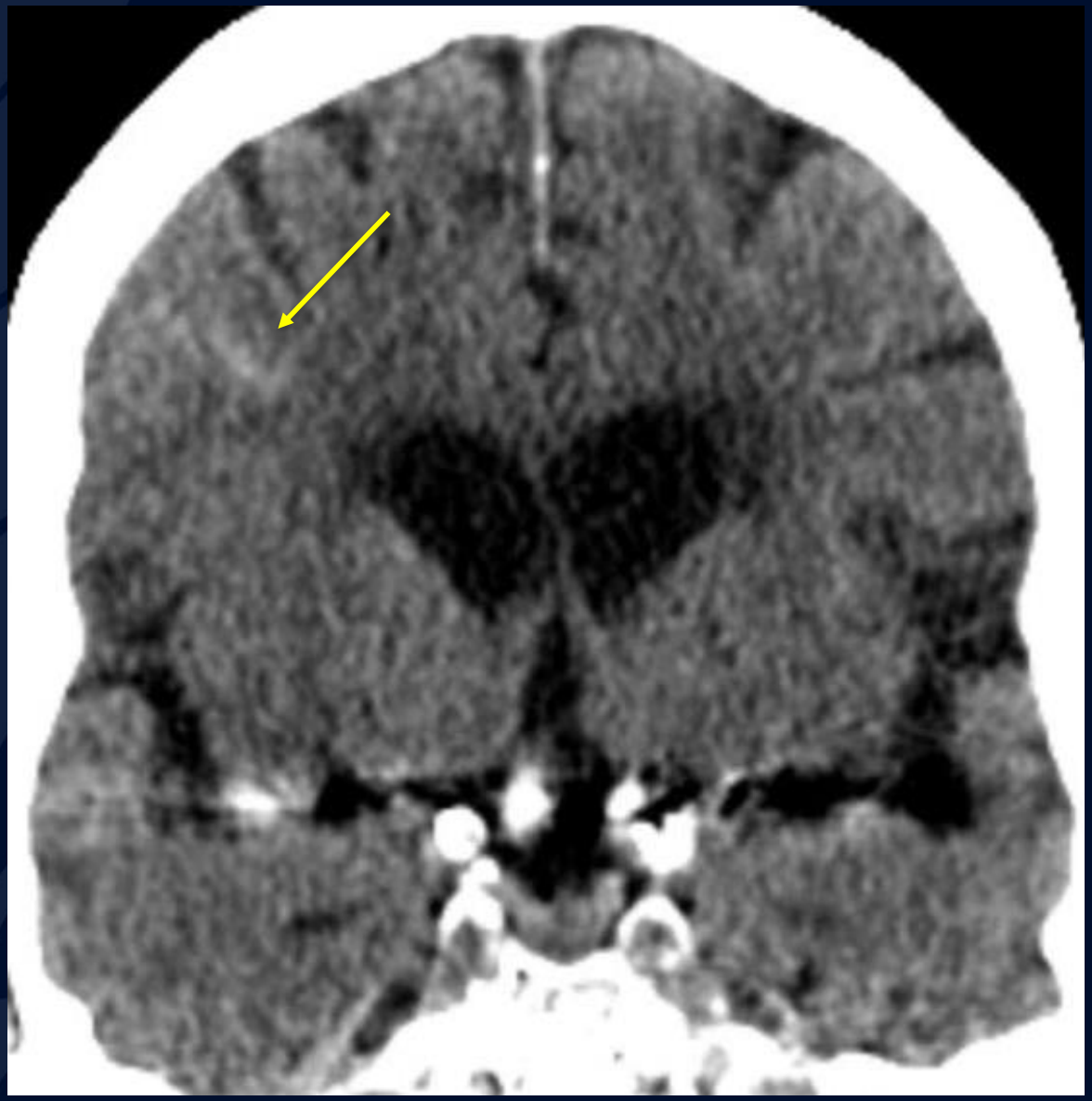

Coronal NECT confirms subarachnoid hemorrhage's curvilinear configuration

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Subarachnoid hemorrhage (SAH)

Most common cause?

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Subarachnoid hemorrhage (SAH)

Most common cause?

Trauma (trick question)

- typically associated with hemorrhagic cortical contusions

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Subarachnoid hemorrhage (SAH)

Most common atraumatic (spontaneous) cause?

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Subarachnoid hemorrhage (SAH)

Most common atraumatic (spontaneous) cause?

- Ruptured saccular (berry) aneurysm >85%

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Subarachnoid hemorrhage (SAH)

Most common atraumatic (spontaneous) cause?

- Ruptured saccular (berry) aneurysm >85%
- AVM
- dural arteriovenous fistula
- isolated perimesencephalic hemorrhage (unknown cause, probably venous)

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Subarachnoid hemorrhage (SAH)

Clinical presentation

- “worst headache of my life”
- Sudden thunderclap headache
- 10% preceded by “sentinel hemorrhage” = self limiting SAH+ headache in preceding days/weeks & can present with infarction

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Subarachnoid hemorrhage (SAH)

Imaging:

CT: gold standard, ER work-horse
– sensitivity is influenced by size & time of bleed.
MRI: when optimized is more sensitive
– CSF hyperintensity on FLAIR
– CSF hypointensity on SWI or GRE
– 3D-FLAIR avoids flow artifacts in cisterns
– DSA is the gold standard for diagnosis of aneurysm
CTA, 90-95% positive if aneurysm >/=2mm
MRA can detect causative aneurysm

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Subarachnoid hemorrhage (SAH)

Rx (if aneurysm)

Coil embolization

Micro-neurosurgical clipping – better for some aneurysms

Vasospasm – Ca2+ antagonist, angioplasty

Top differential (Pseudo-SAH)

Severe meningitis

Global cerebral edema (Hyperdense o CT)

Supplemental Oxygen (Hyperintense on FLAIR)

Cisternal flow (Hyperintense on 2D-FT FLAIR)

Old SAH (Hypointense on SWI)

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Complications

- Rebleeding
- Hydrocephalus (early & late)
- Cerebral infarction from vasospasm (peak ~ 1 week post-bleed

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