

SAH

- 50% mortality
- Vasospasm 1-3 weeks post aSAH
- 20% re-bleed within 1st 2 weeks
- Treatment
 - Coil embolization ("coiling") generally > clipping
- Usually from ruptured saccular aneurysm
- Less common: Intracranial dissection, dissecting aneurysm
- 90% hydrocephalus at presentation~ 10% require permanent CSF diversion
- Likelihood of aneurysm in patient who is CT negative, LP positive, CTA negative is low

SAH

● aSAH highest near site of rupture

- Anterior communicating artery (ACoA) aneurysm → anterior interhemispheric fissure
- Middle cerebral artery (MCA) aneurysm → sylvian fissure
- Basilar tip, superior cerebellar artery (SCA), posterior inferior cerebellar artery (PICA) SA, or vertebral artery (VA) dissecting aneurysm (DA) → prepontine cistern, foramen magnum, 4th ventricle

● "Culprit" aneurysm sometimes seen as filling defect within hyperdense aSAH

Aneurysm

- SAs typically located at bifurcation points along intradural ICA, circle of Willis (COW), MCA
 - 90% located on anterior circulation: ACoA, posterior communicating artery (PCoA), MCA, carotid terminus, carotid-ophthalmic, superior hypophyseal
 - 10% on posterior circulation: Basilar tip, PICA, anterior inferior cerebellar artery (AICA), SCA
- DAs: Intradural V4 VA segment most common
- CTA
 - 90-95% positive if aneurysm ≥ 2 mm
- MRA
 - TOF MRA 85-95% sensitive for aneurysms ≥ 3 mm

Vasospasm

- Caused by blood breakdown products, apolipoprotein-E genotype, endothelin-1 release from CSF leukocytes
- 70% develop angiographic evidence of vasospasm
- 30% have clinically apparent vasospasm
- Starts ~ day 3-4 post SAH; peaks ~ 7-9 days, lasts ~ 12-16 days

Isolated Acute Nontraumatic Cortical Subarachnoid Hemorrhage

- Ateriovenous malformations or fistulas,
- Cortical venous and/or dural sinus thrombosis,
- Reversible cerebral vasoconstriction syndrome (RCVS)
- Vasculitides
- Mycotic aneurysms
- Moyamoya or severe atherosclerotic carotid disease) should be sought by noninvasive imaging methods or/and conventional angiography.
- PRES
- Cerebral amyloid angiopathy
- *Leptomeningeal metastasis is the main differential of isolated cSAH, due similar, CT and FLAIR findings.*