

# GIANT THROMBOSED ANEURYSM WITH INTRAMURAL ARTERY AND LOW-FLOW AV FISTULA

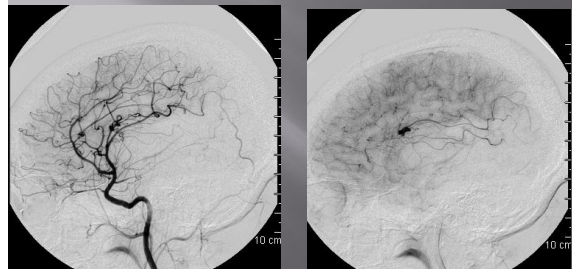
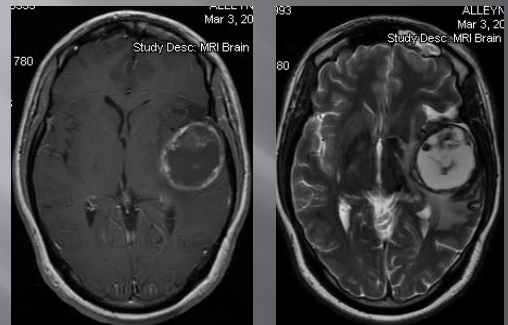
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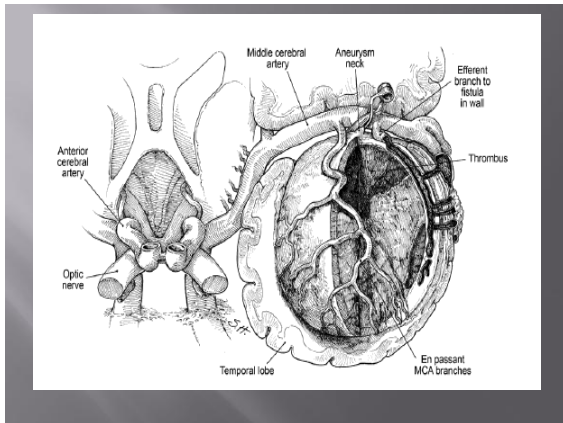
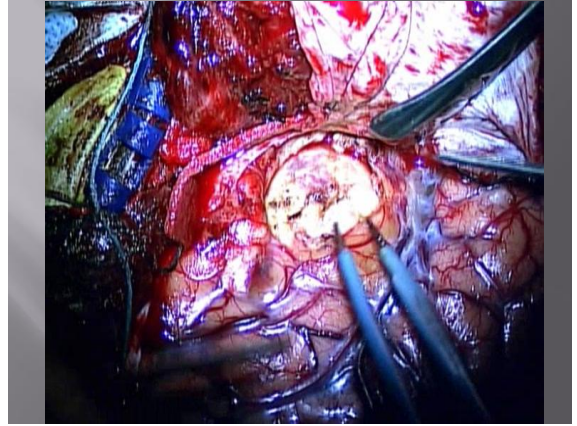
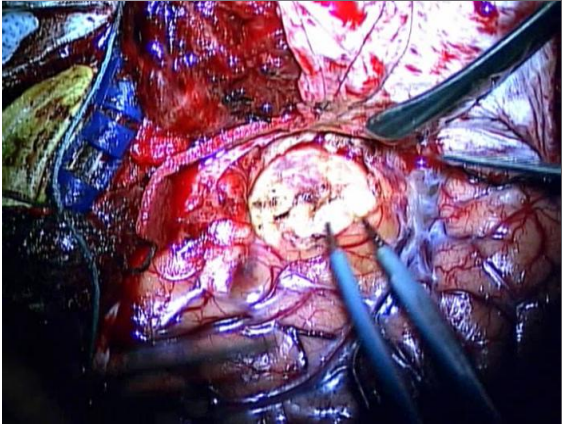
## Presentation

- 36 year-old female presented to ED after seizure at home
- Followed for two years prior by neurologists for headaches, presumed to be migraines

## Imaging

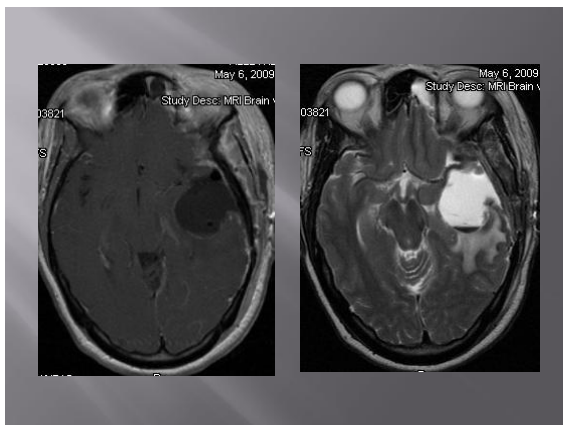
- Initial imaging showed what appeared to be cyst
- Later MRI/MRA revealed aneurysm
- Maintained on anticonvulsants and angiography confirmed giant left thrombosed MCA aneurysm





## Outcome

- Patient did well postoperatively, returned a few weeks later with improved headache



## Giant Aneurysms

- 5-7% of intracranial aneurysms (>2.5 cm)
- Saccular or fusiform
  - Giant serpentine: partially thrombosed aneurysms with extremely tortuous vascular channels that can develop from saccular or fusiform

## Clinical Presentation

- Severe headache
- SAH
- Mimics tumor, compression of CN's, gradual neurological deterioration
- TIAs, strokes
- Seizures

## Surgery of Giant Aneurysms

- Frequently difficult to dissect neck
- Dome can be in deep brain structures
- Cutting a portion of the sac free - easier dissection
- Wide neck as aneurysm grows - clip may slip into parent vessel

## Natural History

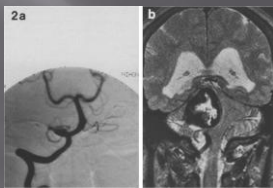
- Growth from thrombus formation or slow expansion of aneurysmal lumen
- Sometimes entirely occluded on angiogram
- Possible thromboembolism into parent vessel
- Aggressive management justified by death within few years from rupture or ischemia

## Natural history

- Angiographic lumen can change from formation or resolution of thrombus
- Giant aneurysms can also grow by:
  - Intramural hemorrhage
  - Hemorrhage between wall and old luminal thrombus

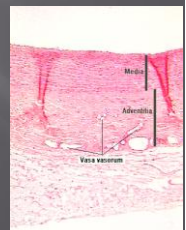
## Natural history

- Totally thrombosed aneurysms can grow
  - Katayama, et al. *Neuroradiology*, 1991;33:168-70
    - Growth of a giant posterior fossa aneurysm over 4 years. MR showed onion-skin-like structure within a calcified wall.
    - Recent clot formation suggested growth was by recurrent intramural hemorrhage rather than intraluminal thrombus



## Natural history

- Hypothesis:
  - Subadventitial rupture of vasa vasorum cause hemorrhagic enlargement of giant aneurysms
  - There are usually no vasa vasorum in the intracranial arteries of the young and healthy but...
  - Giant intracranial aneurysms can have intramural vasculature



## Implications for treatment

- ▣ If rupture of the vasa vasorum is the underlying cause of giant aneurysm growth then...
  - Endovascular therapy may not be successful since
  - Only surgical trapping or excision excludes a vasa vasorum connection between parent artery wall and aneurysm neck

## Conclusions

- ▣ Giant thrombosed aneurysms represent a distinct subgroup of aneurysms with unique natural history
- ▣ Our case shows a graphic example of 3 types of associated arteries and a mechanism of possible aneurysm growth despite complete thrombosis