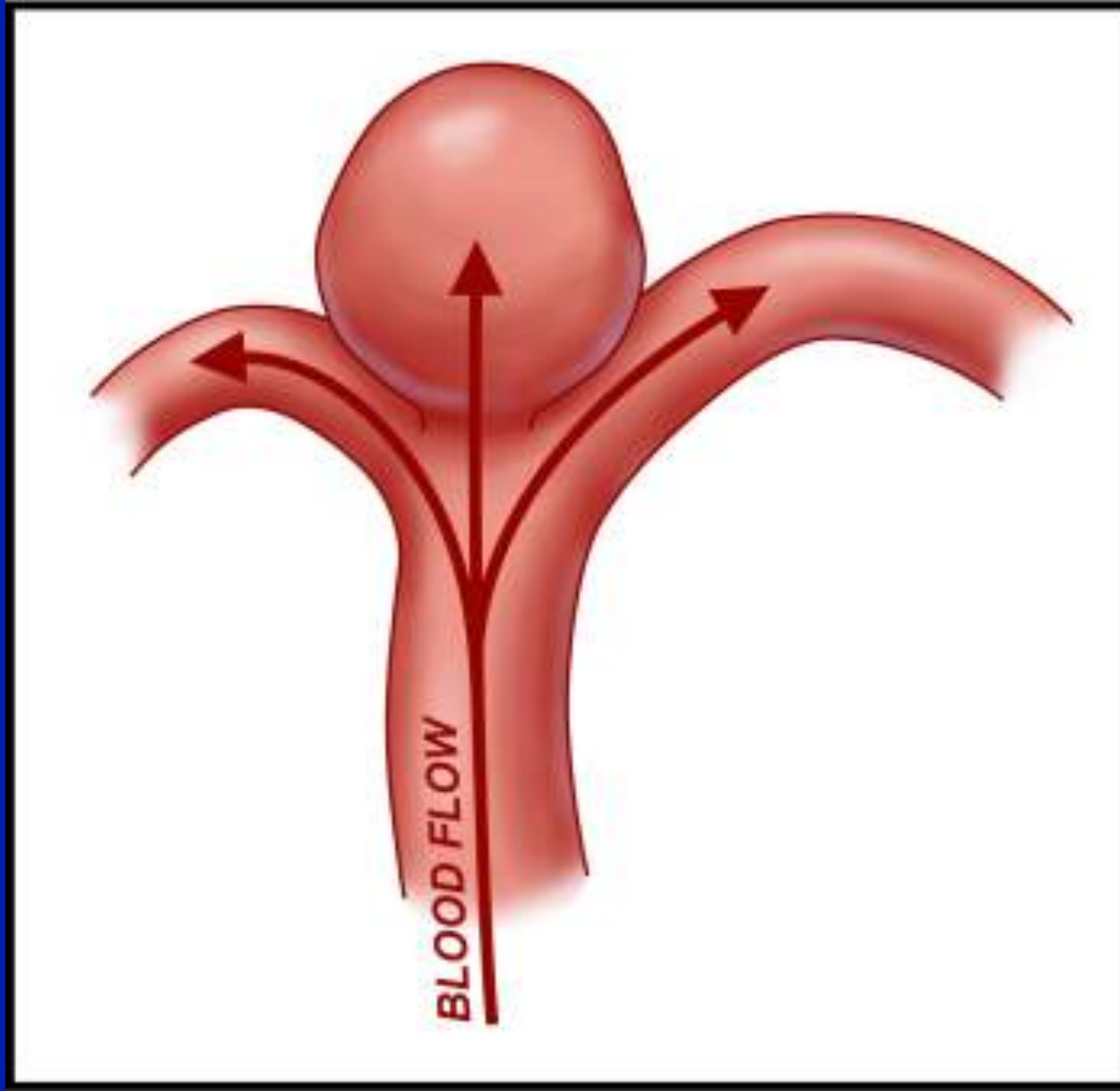


# Intracranial Aneurysm and Subarachnoid Hemorrhage

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# Natural History

- Approx. 1.5% of population harbors a true brain aneurysm (Mayo, Jnsurg)
- There are 28,000 SAH/yr USA (mean 52y/o)
- Risk of hemorrhage /year approx. 2-3%
- IF SAH...25% fatal in 24 hrs
- 25% fatal in one week
- 30-40% survivors impaired

# Clinical Presentation

- Probably is no general “trigger” in most
- BANG.....SUDDEN HA
- HA generally does not dissipate over hrs
- 30% have N/V but NOTHING is necessary but the SUDDEN HA
- Nuchal pain often >24hrs (MNI,Jnsurg)

# Clinical Pres/Rx

- Comatose pt is not a Dx challenge
- > 50% of pts with SAH at MNI seen in ER were sent home (Jnsurg)..otitis etc
- After initial SAH...20% rebleed within 2 weeks, 20% vasospasm
- Dx is dependent on Hx...NOT exam in good grade pts!!!!

- You can't change the initial event (GI, GII, GIII etc)
- You CAN change the rebleed and vasospasm secondary "hit"...rebleed first 14 days is >80% fatal

# Dx

- Hx, Hx, Hx (SUDDEN and bad with persistence)
- Plain CT will Dx >90% IF in first 24hrs. SAH thins after and by day 3 is <60%
- CTA is now excellent addition (MRA?)
- If Hx is good and CT neg... LP!!!!

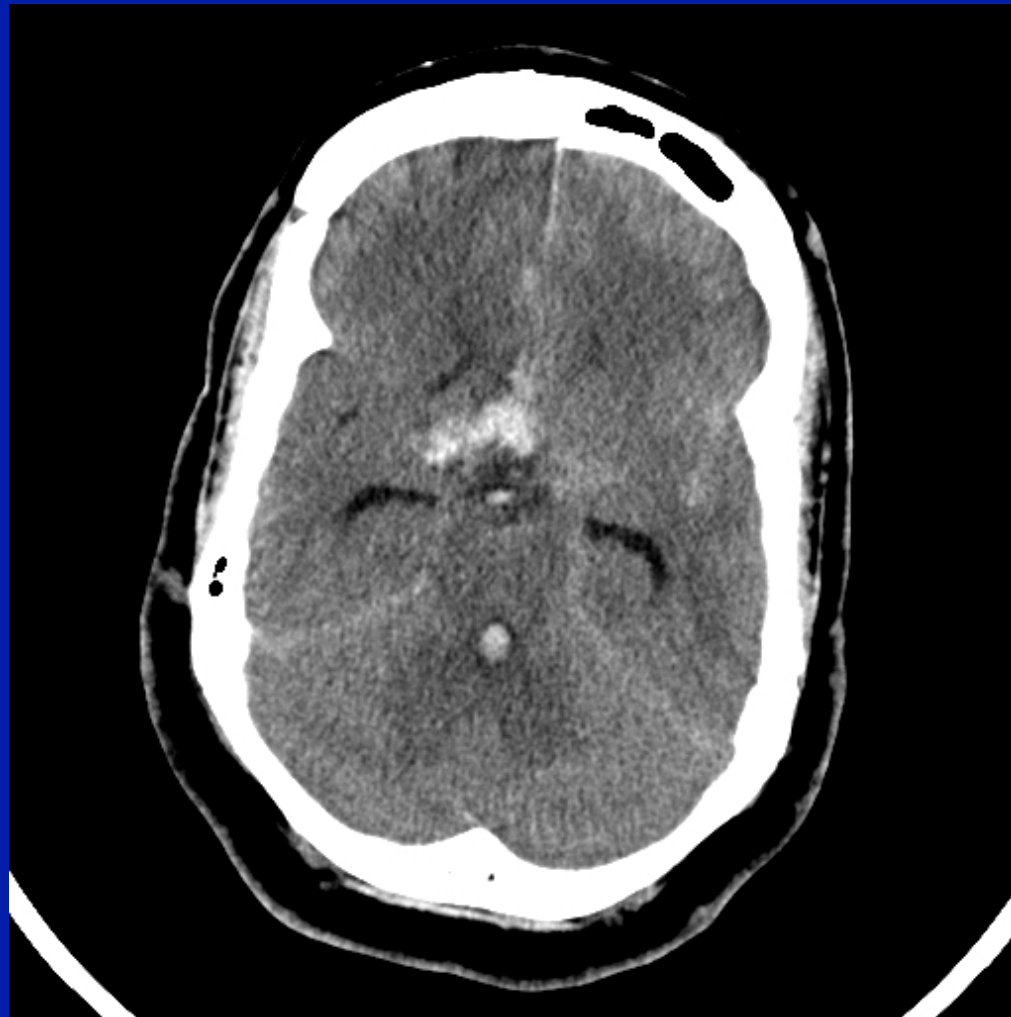
# Initial Rx

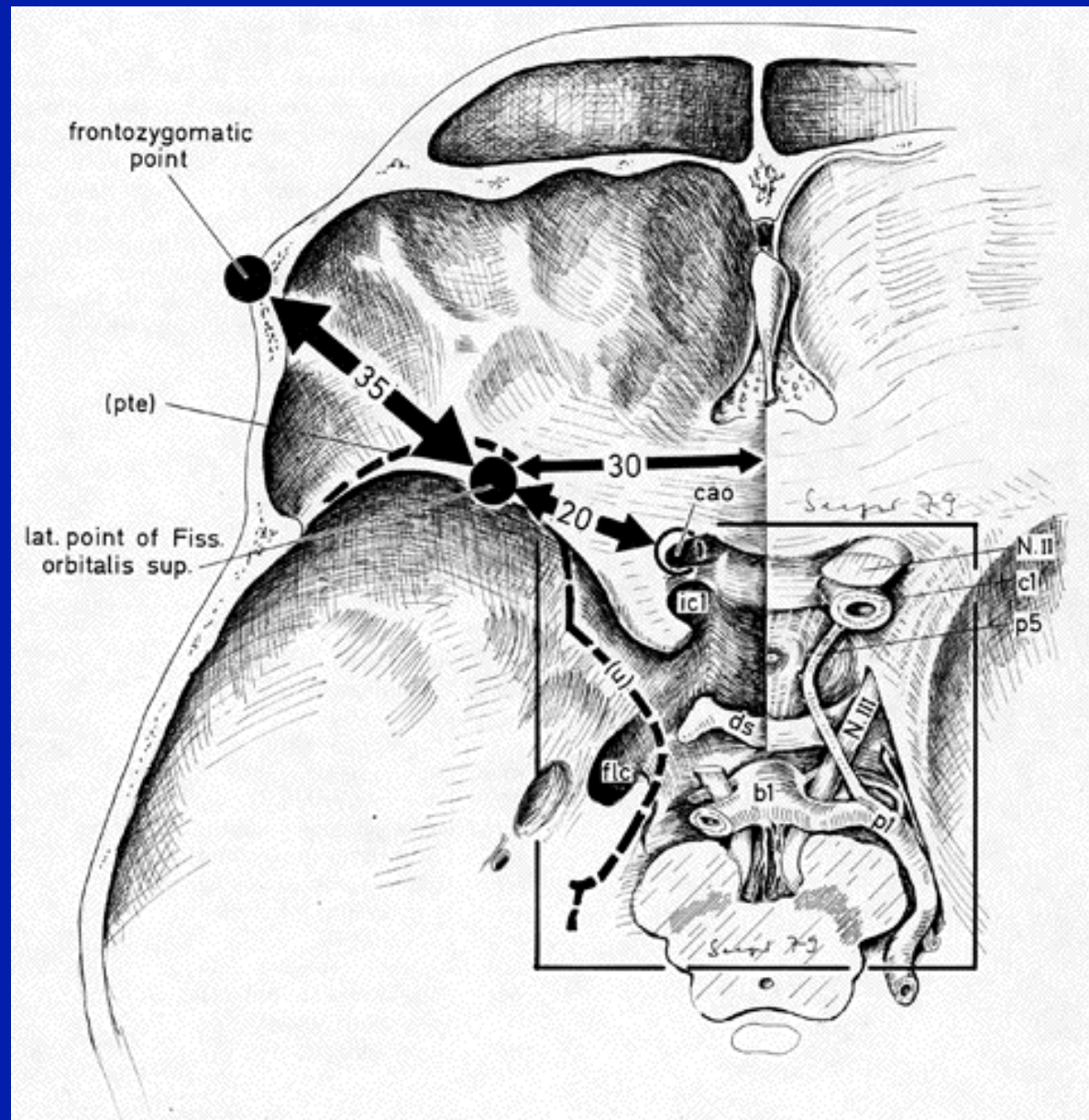
- Always O2, airway (two fingers), BP control (<130syst)
- Szs: <10% (NEJM 2011 10mg Versed IM superior to IV Ativan)
- Pain med (IV MSO4 etc)
- CTA, formal angio etc



# Surgery or Endovascular Rx

- Until 1978+ data suggests nature was competitive with any surgical Rx.
- Microscope and anatomic data dramatically changed outcomes 1980-2000 for surgical group





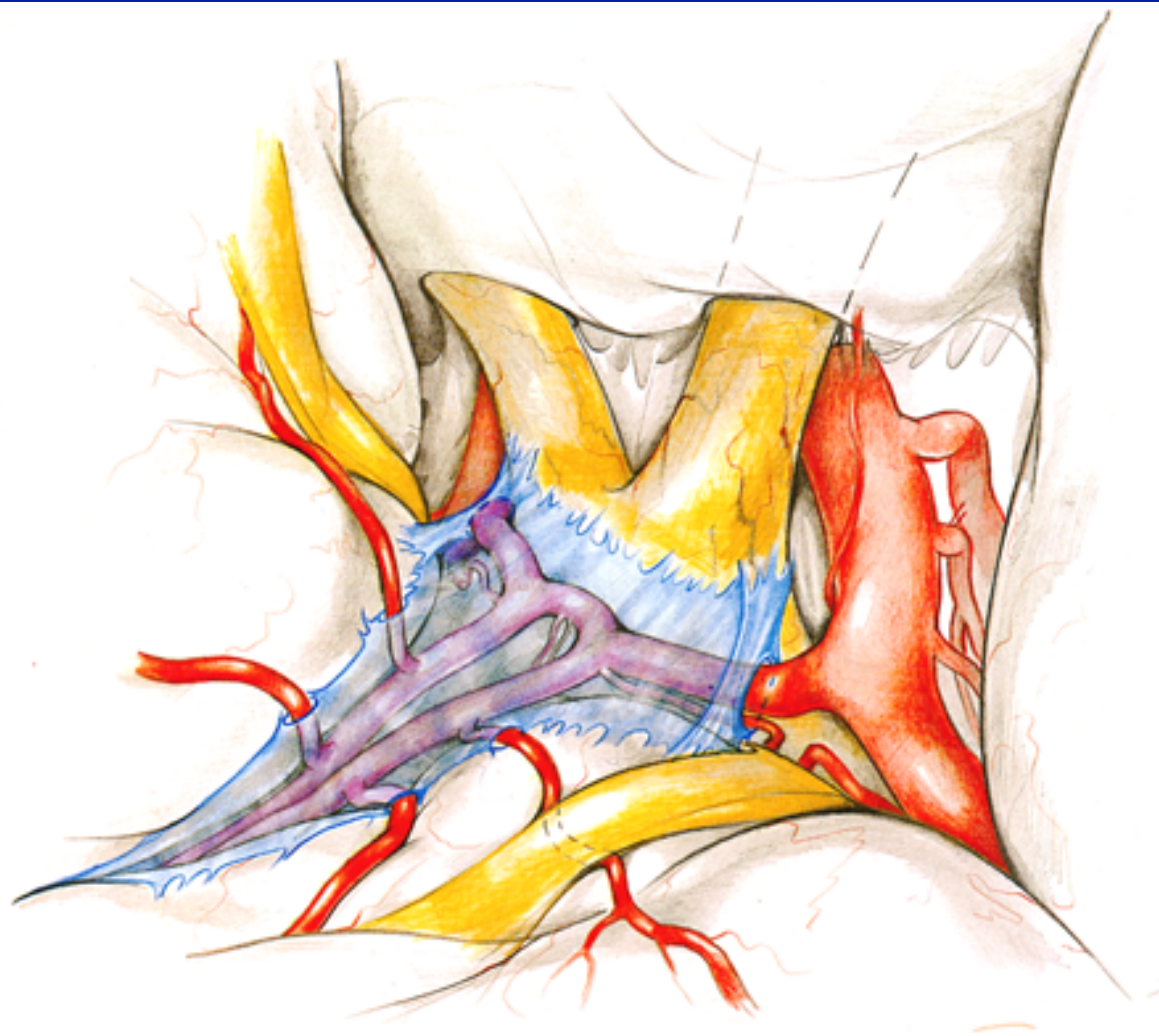
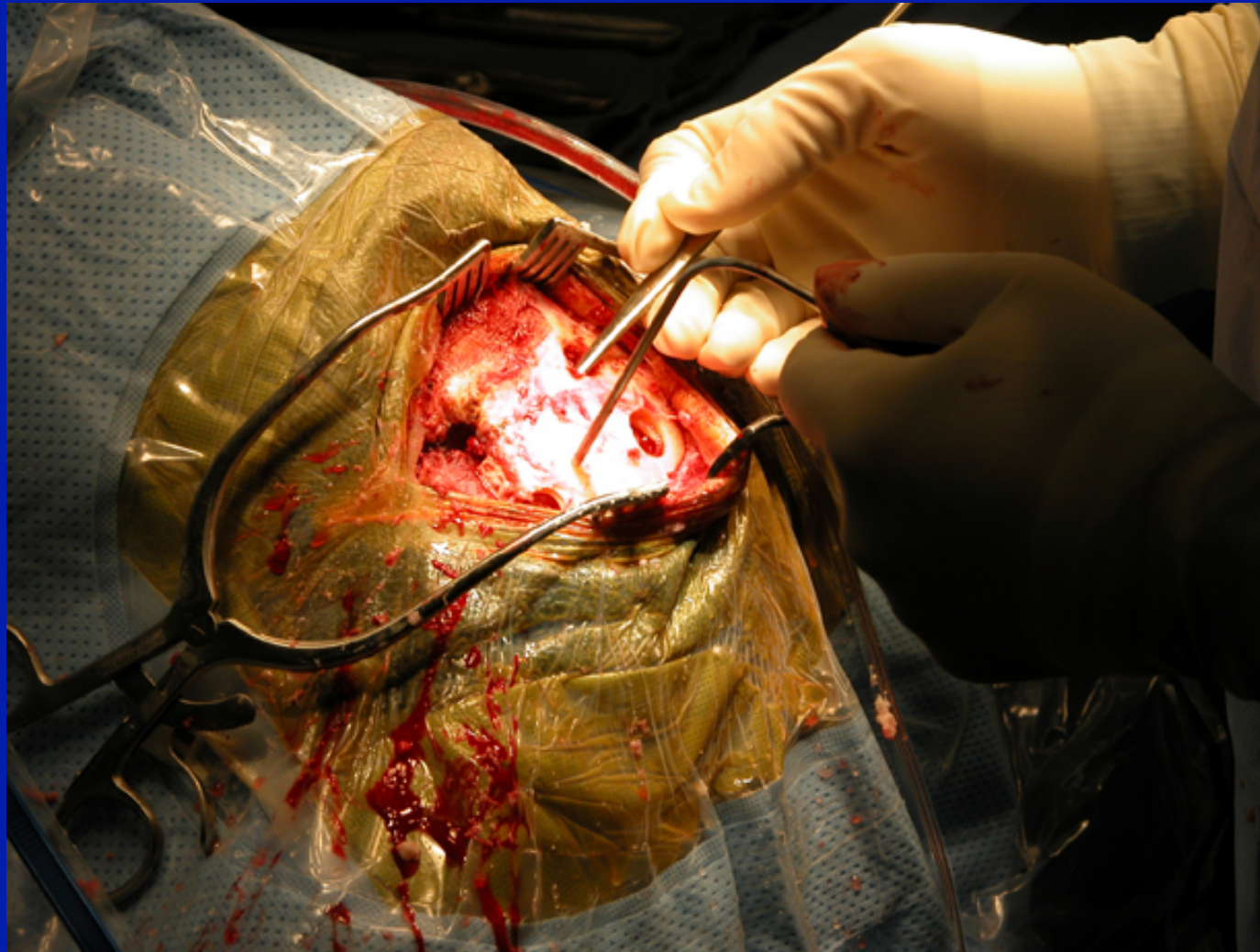
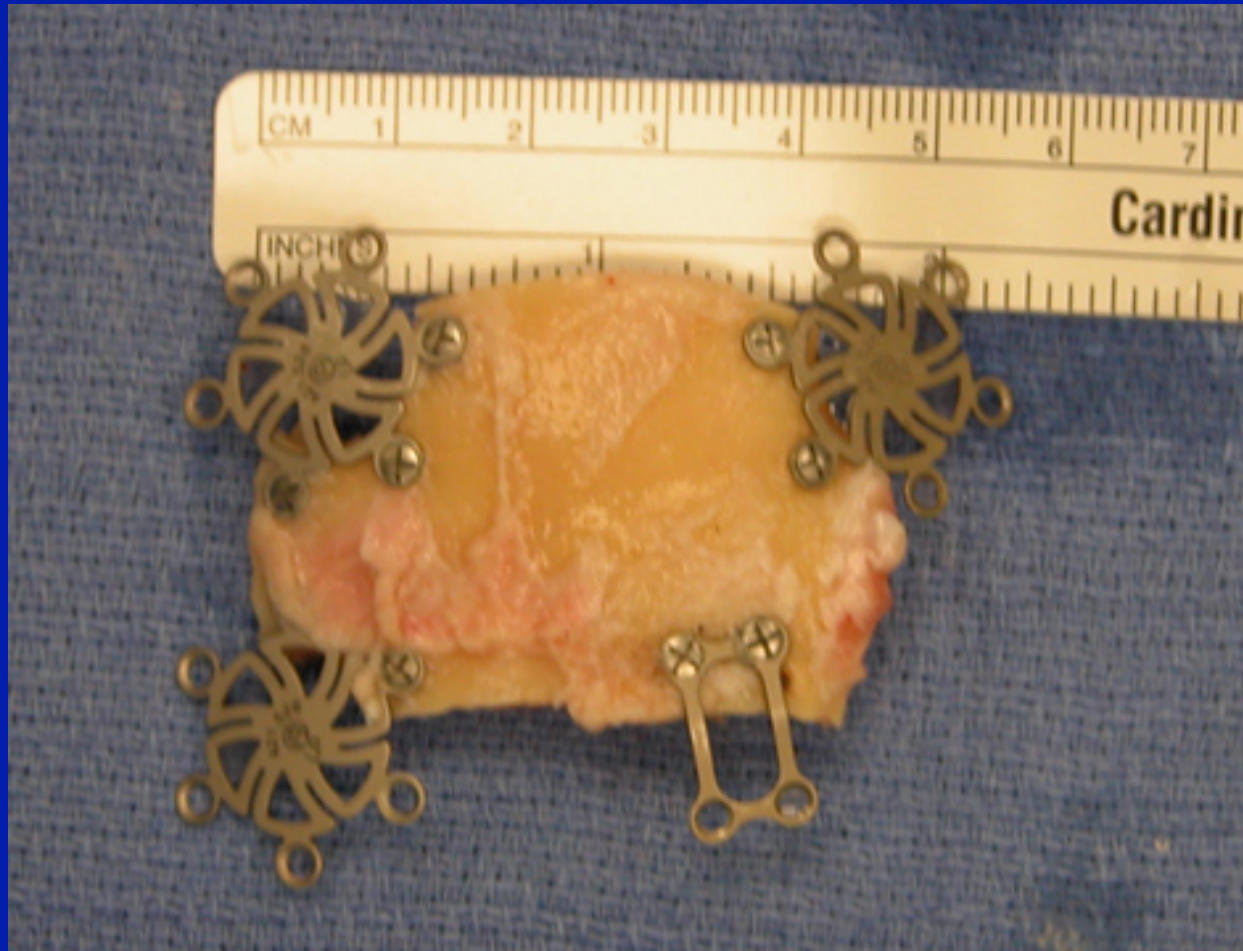


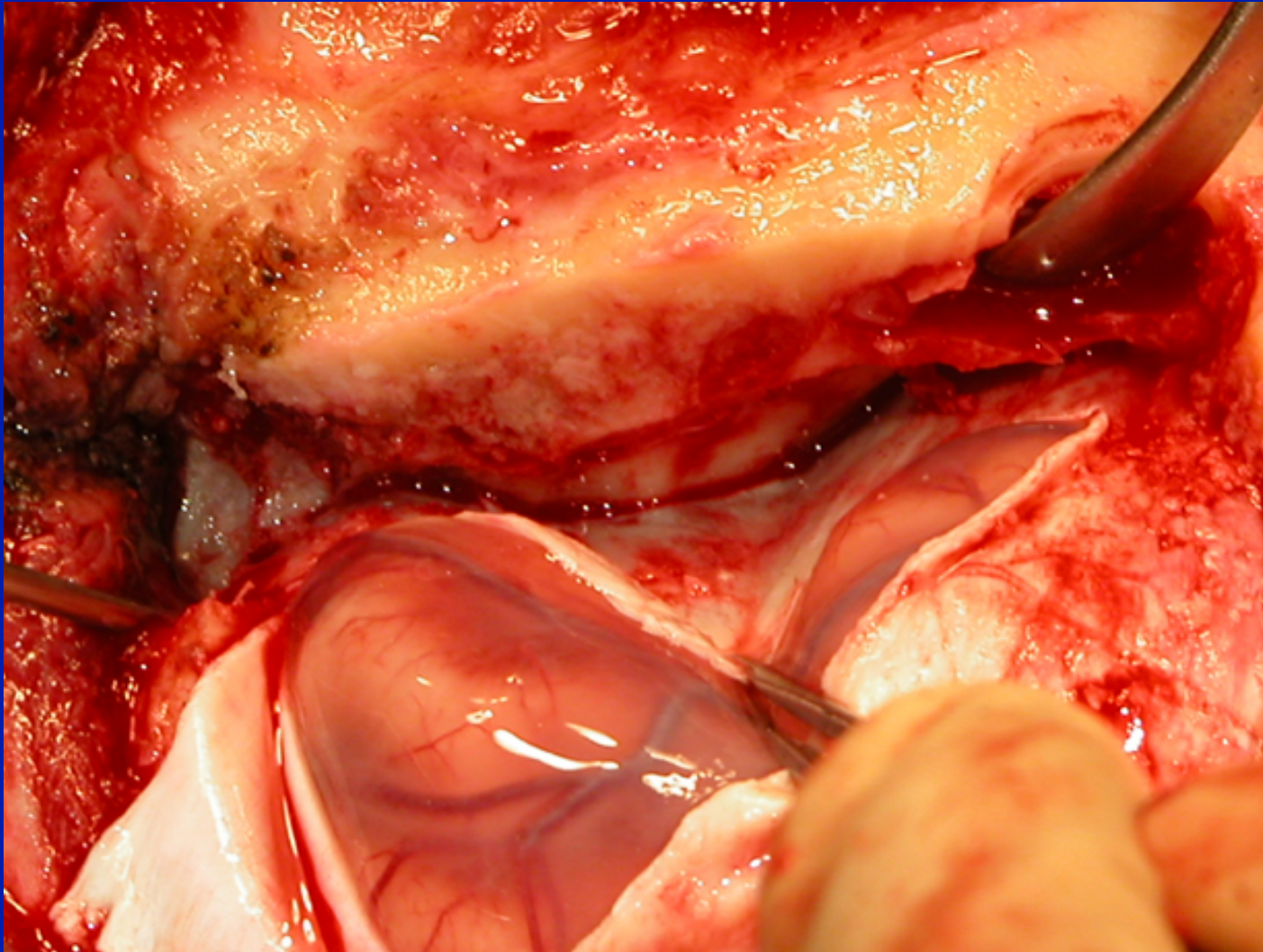
Fig 16 Schematic drawing of the lamina terminalis cistern containing both A<sub>1</sub> and proximal part of A<sub>2</sub> segment and anterior communicating artery and branches.

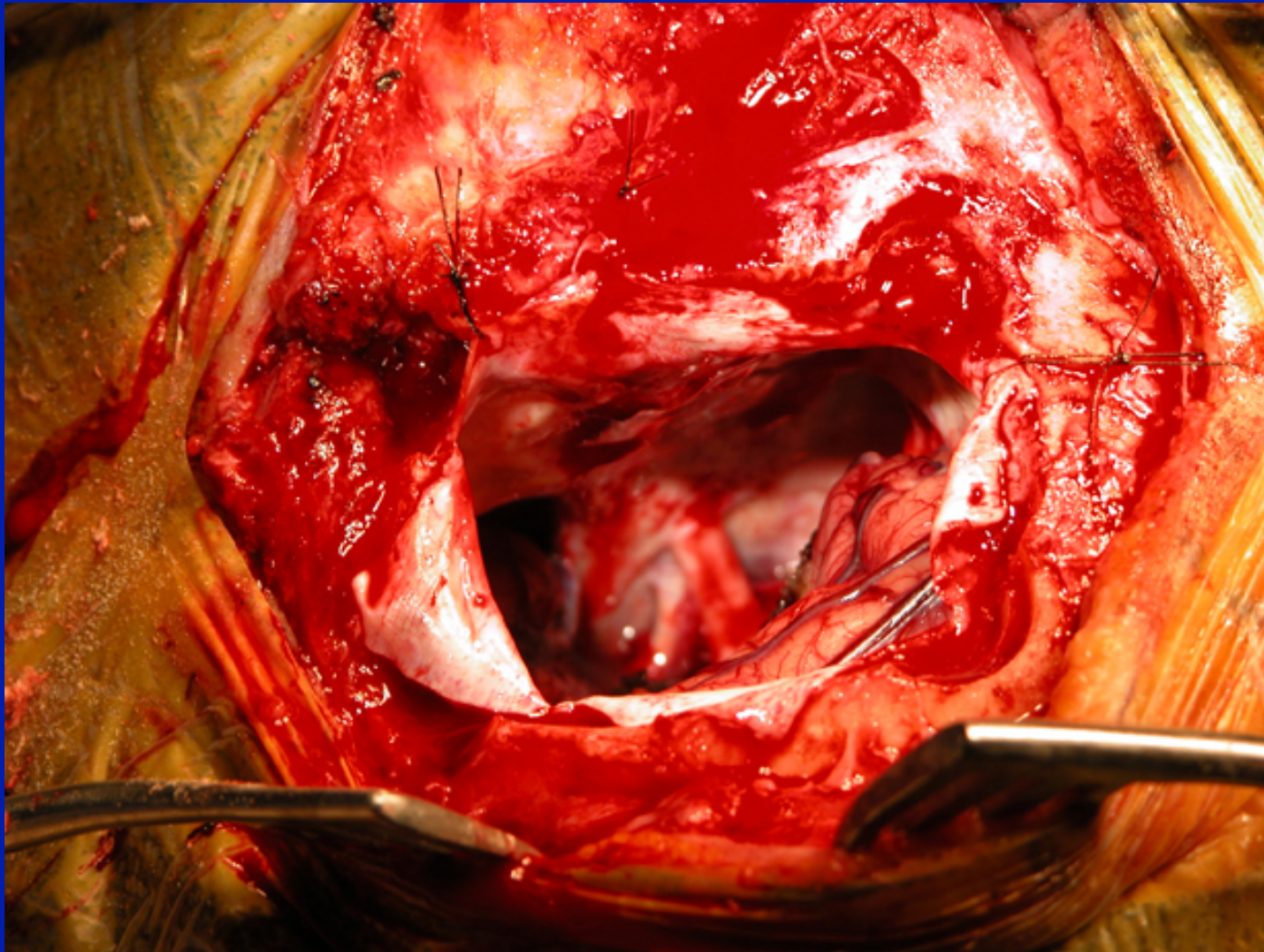




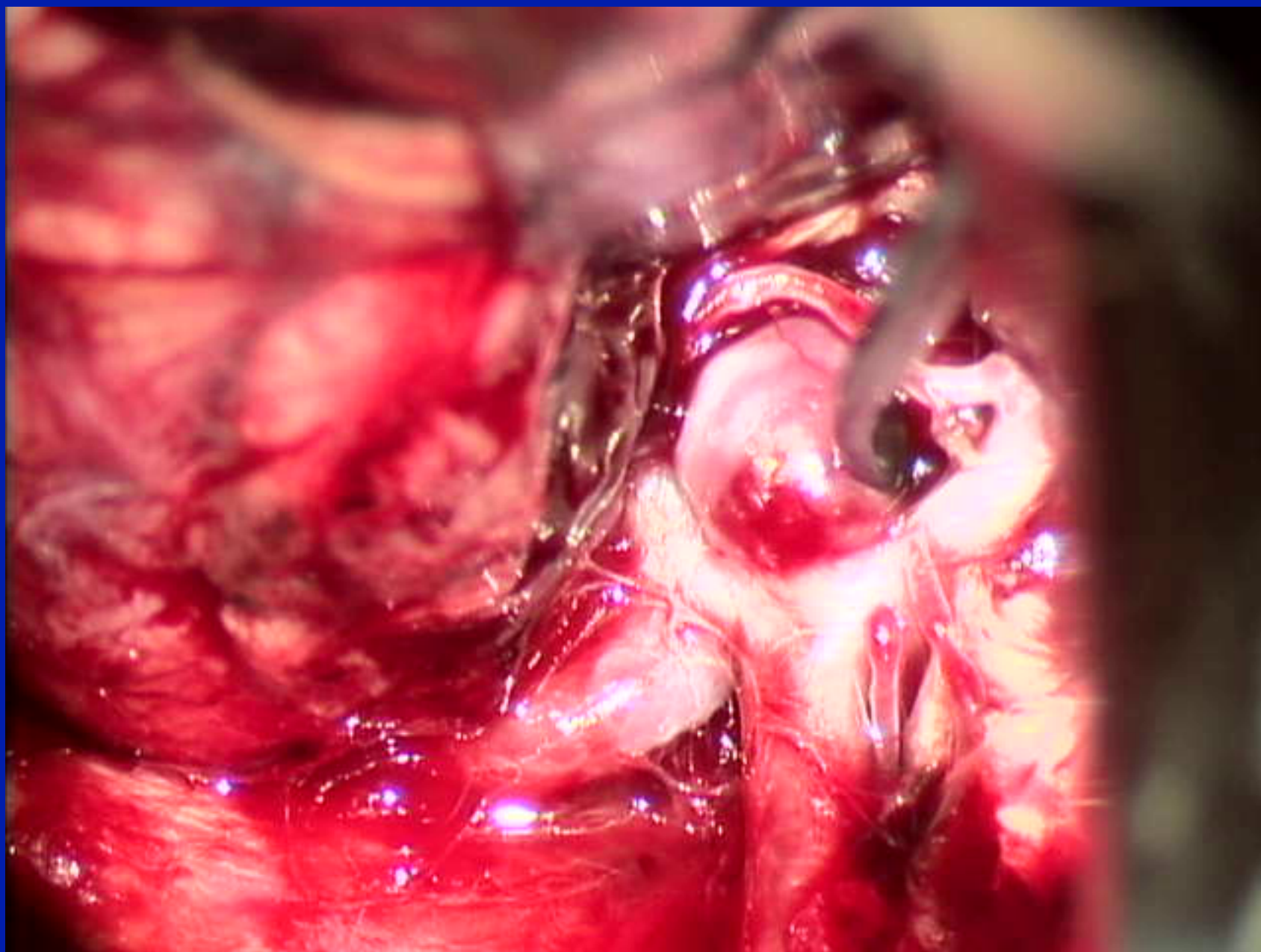


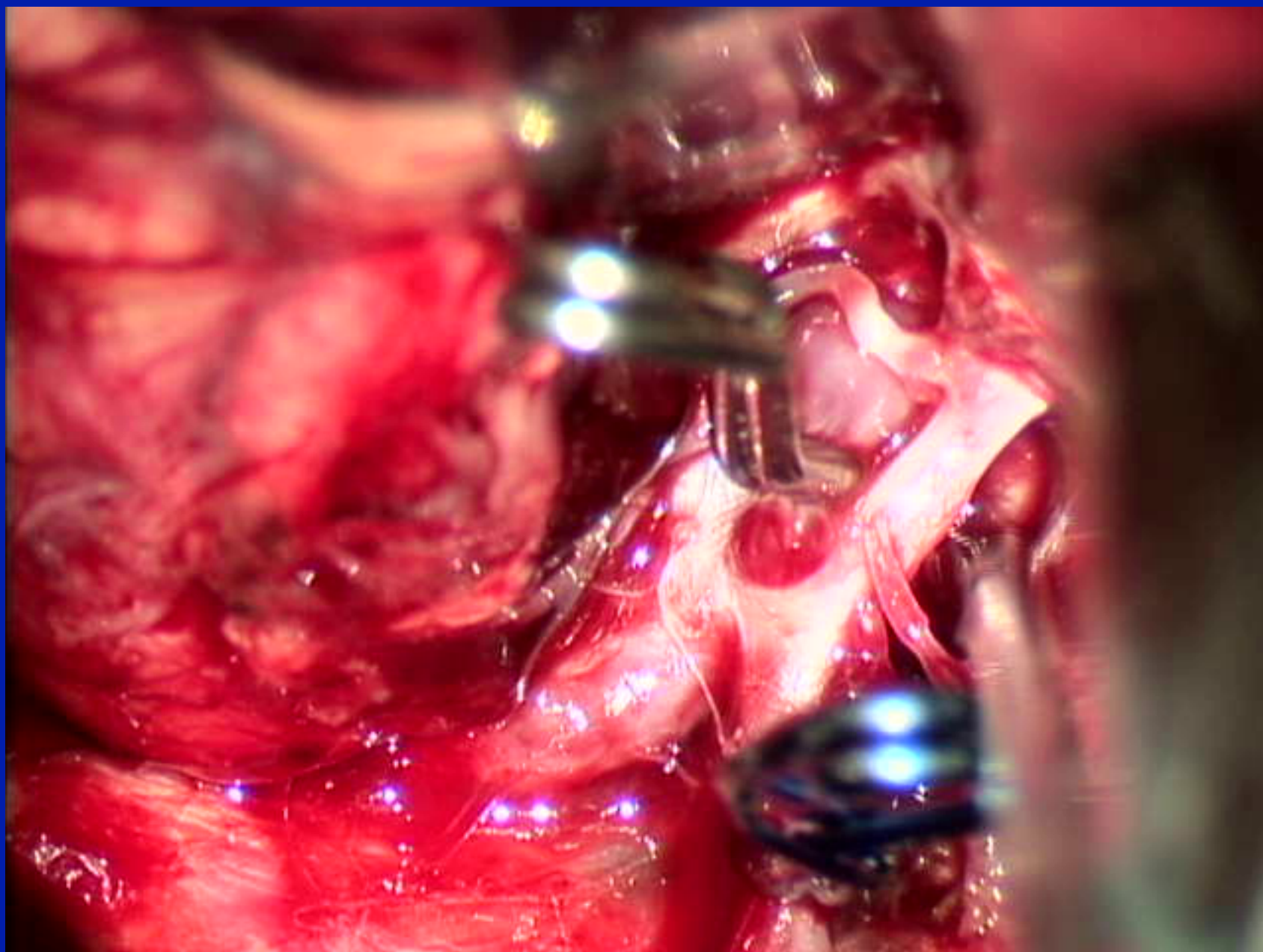


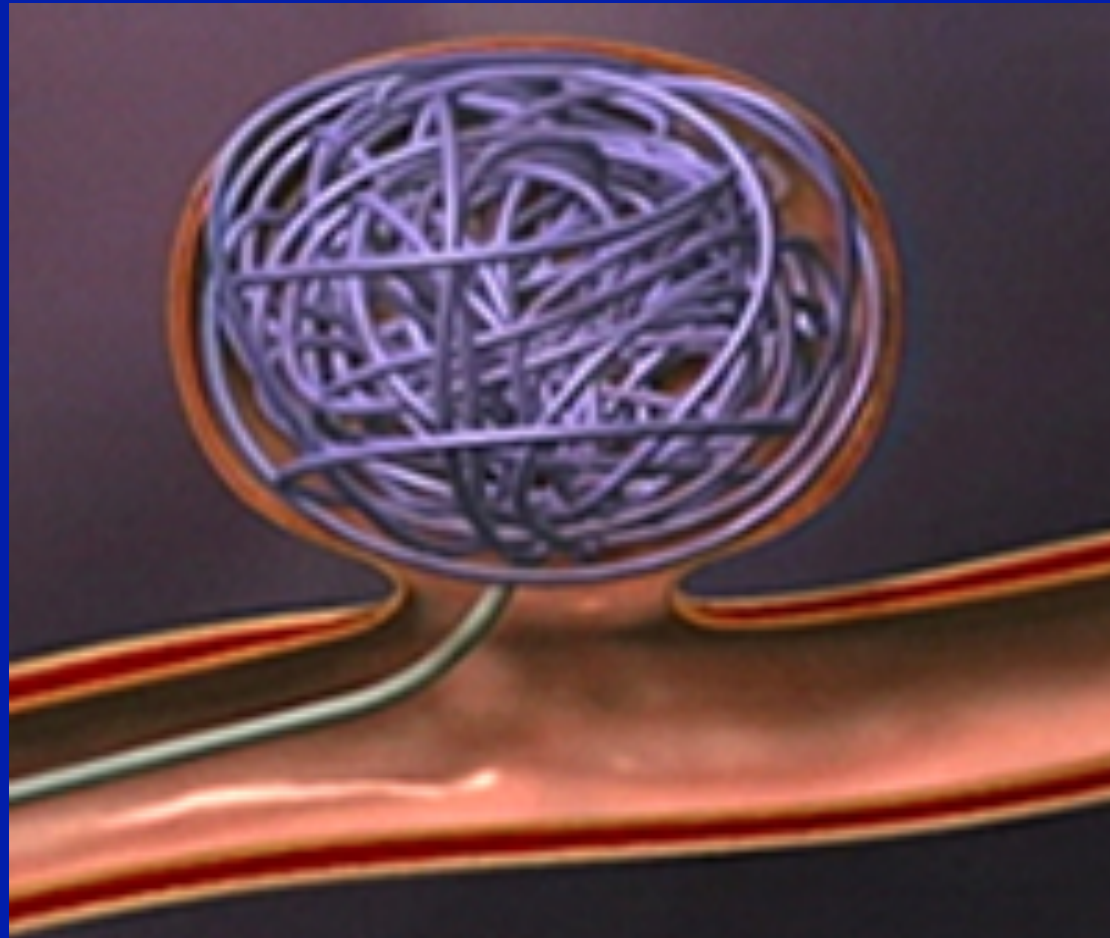












# ISAT Study

- 2143 pts enrolled from 1994-2002
- 43 centers (primUK) randomly assigned to surgical clipping vs endovascular coils



# ISAT

- Mean f/u on 2004 pts @ 9yrs (Molyneux et al Lancet 09)
- 24 rebleeds after one yr..13 in the target aneurysm...10 in another local, 1?
  - Note: Rx'd SAH pts CAN have denovo lesions
  - 10/13 rebleeds were in coil group (1%)...some increase but has been small...early experience etc
  - 82% coil pts independent, 83% independent

# ISAT

- Improved Cognitive Outcomes with Endovascular Rx of ASAH (Scott, RB et al..Stroke 2010)
  - Extracted ISAT pts from 8 UK centers for detailed npsych studies
  - Only took pts considered “not disabled”
  - 474 pts opted to participate..=groups
  - 32% had notable impairment..70/262 coil group vs 82/212 surgical group

# Current Decision Tree

- Dx is everything in good grade pts
- CT,CTA,LP angio etc
- Endovascular eval approx 80% will go to endo Rx
- Surgery reserved for those that cannot be coiled for technical reasons...???  
some young MCA etc??

“I would rather die on my feet  
than live on my knees.”

Emilio Zapata



- Vast majority occur at base of brain in the Circle of Willis