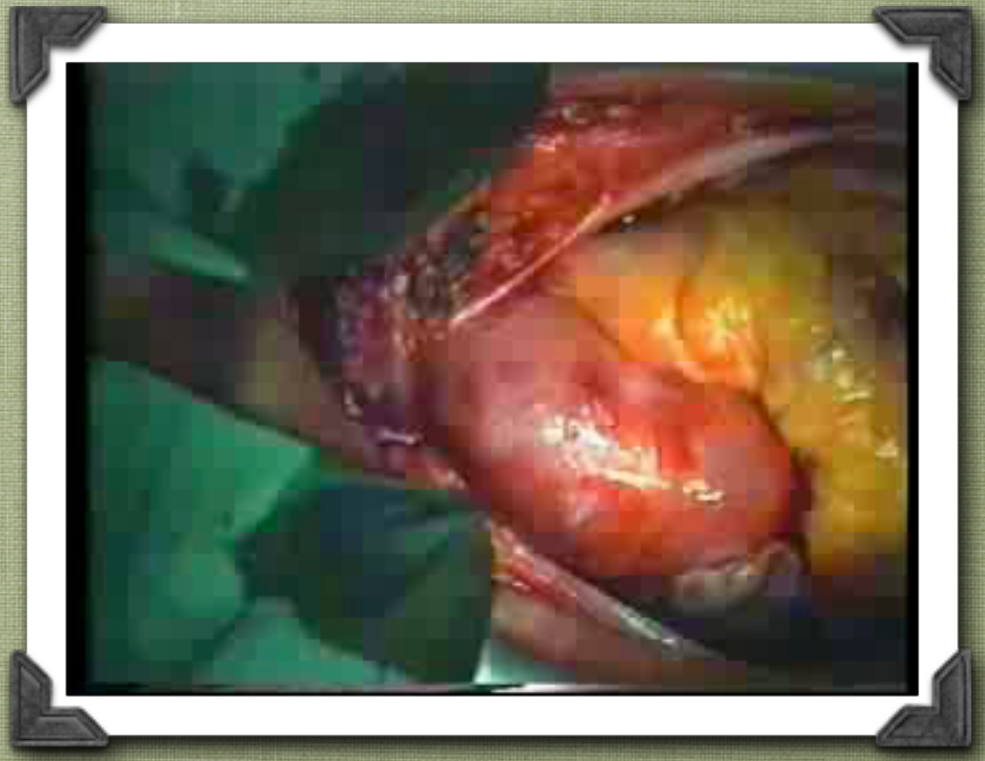
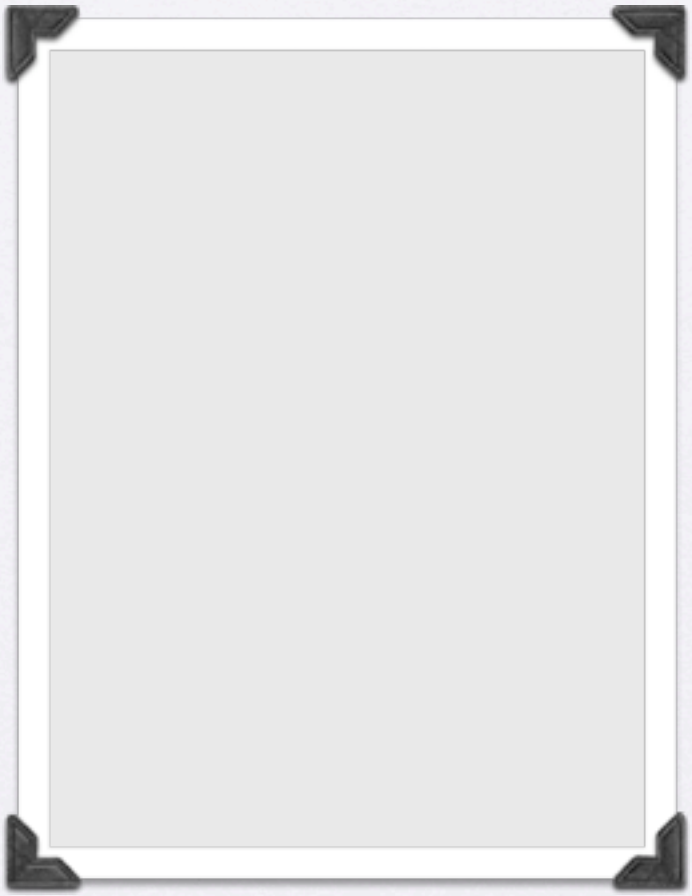
Acute Vascular Emergencies



Case 1

40yr old, very sudden onset of occipital headache, fainted and vomited. Has severe headache and drowsiness. GCS 13/15, neck stiffness with a mild left facial weakness (UMN). No other neurology.



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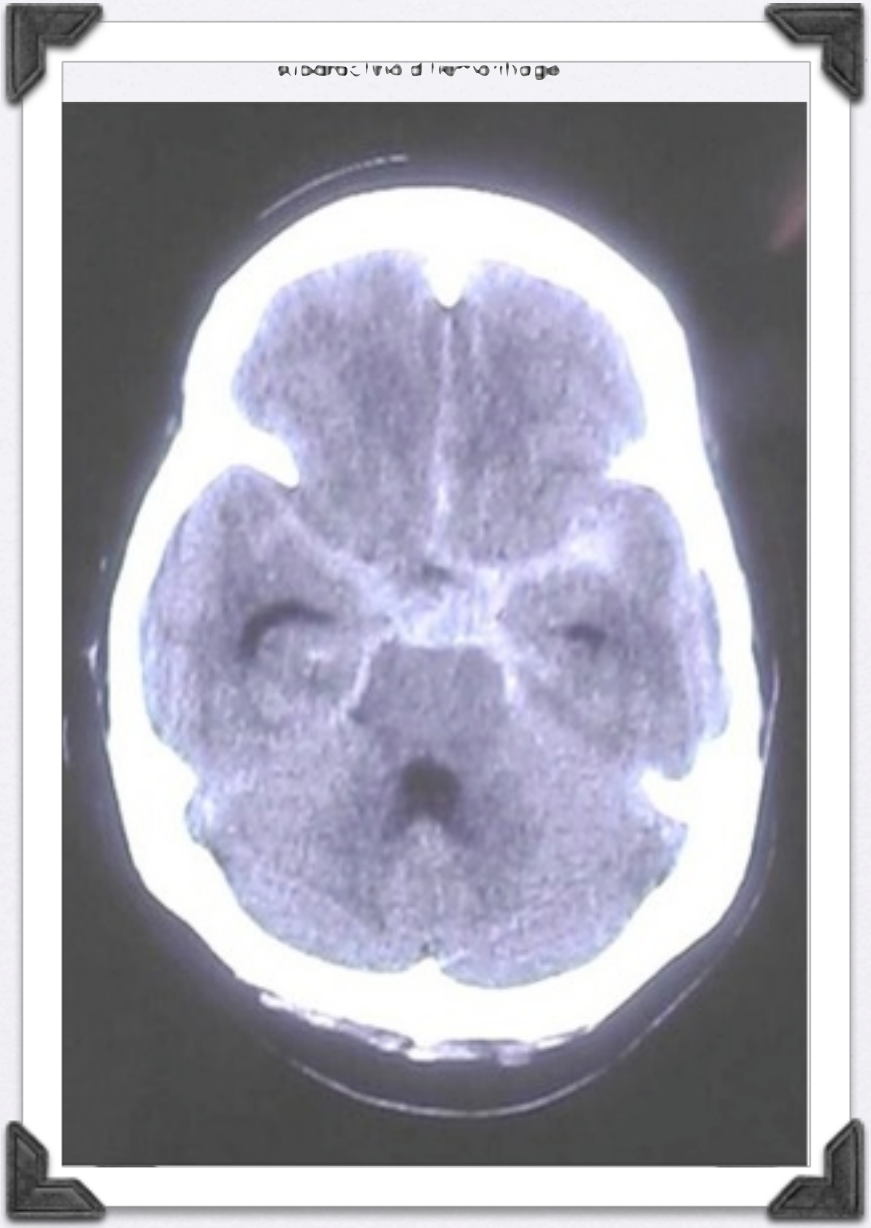
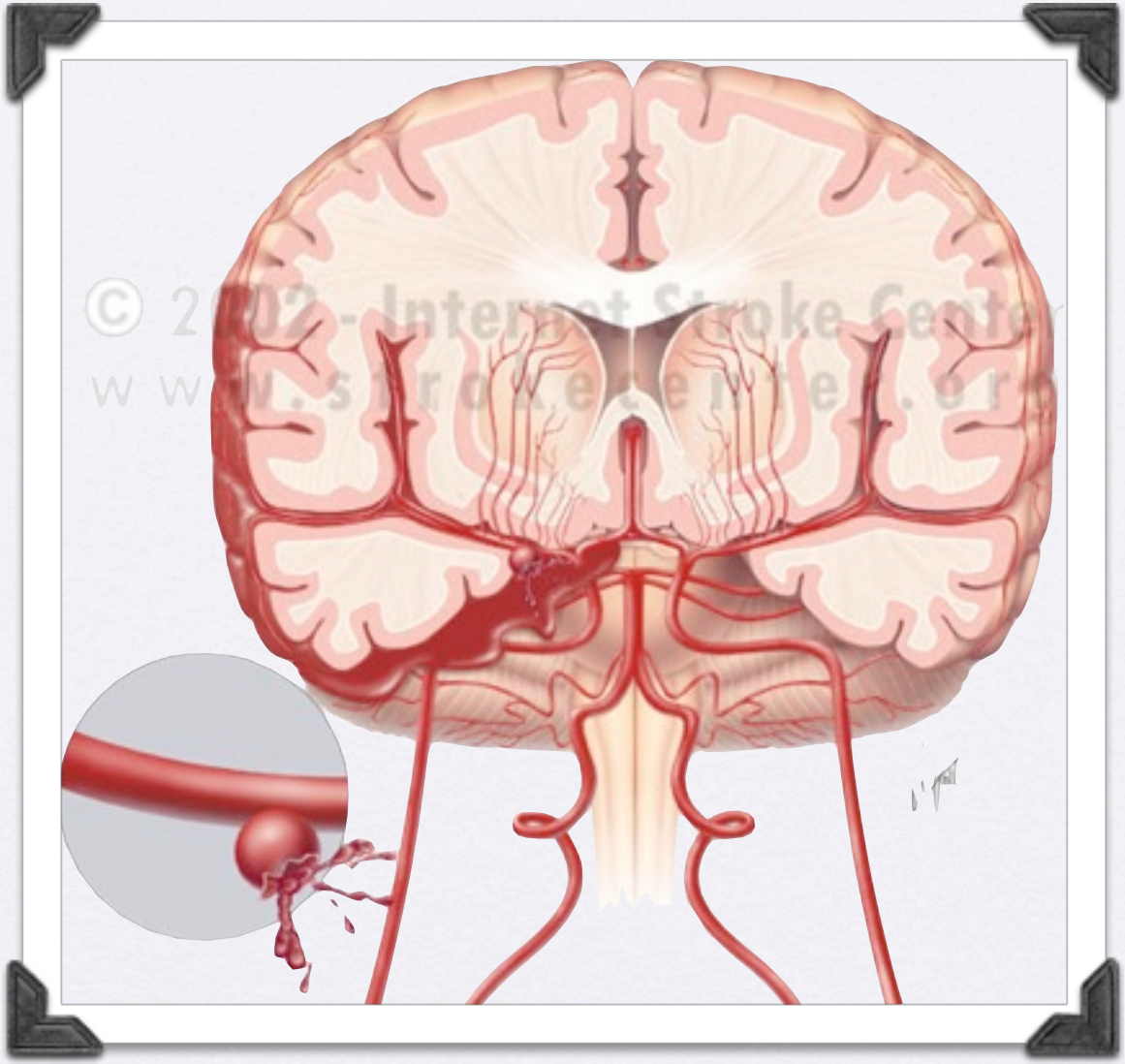


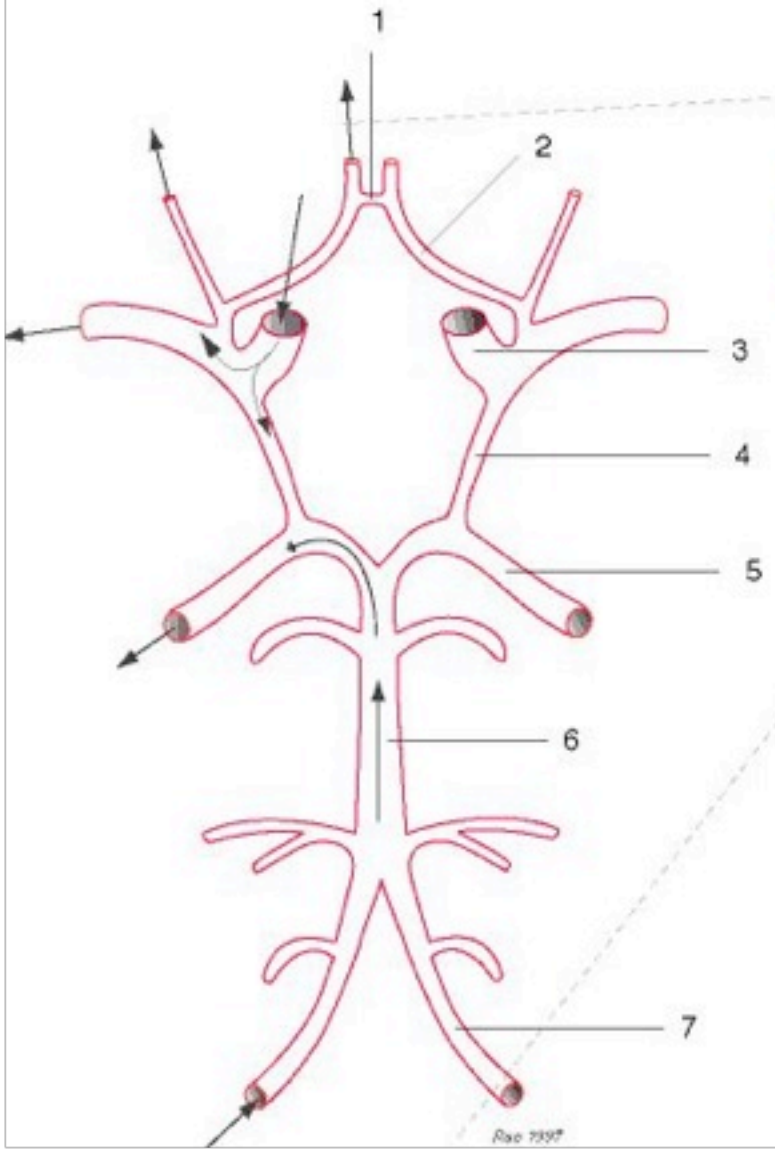


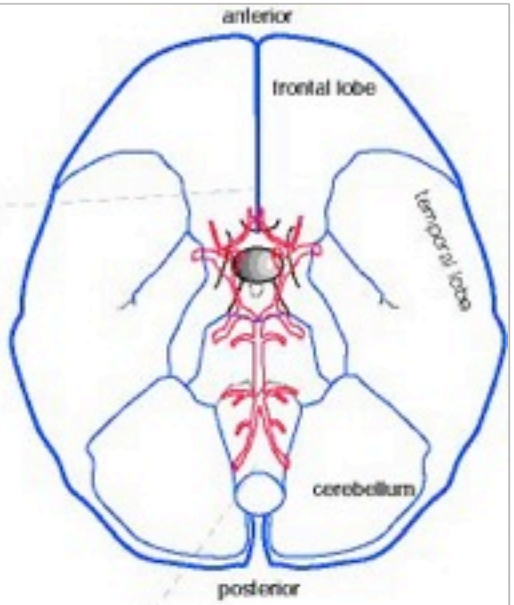
Subarachnoid Haemorrhage

Pathogenesis

- Usually ruptured Berry aneurysm (80%)
- Family history (3-5 fold increased risk)
- Sentinel bleed-30% will then rupture
- 10-30% re-bleed in 3/52
- Secondary to trauma/haemorrhagic cerebral CVA with spread into SA space
- 8/100000/yr
- 35-65 usually

The Arterial Circle of Willis





Inferior view of the brain

Arteries of the Circle of Willis*

1. Anterior communicating*
2. Anterior cerebral*
3. Carotid
4. Posterior communicating*
5. Posterior cerebral*
6. Basilar
7. Vertebral

Clinical features

- Thunderclap headache
- Neck stiffness (90%)
- Vomiting
- May have neurological signs, up to 25% are in a coma
- Seizures (25%)
- history of LOC

Diagnosis

HUNT & HESS GRADING SYSTEM

- I: asymptomatic/mild headache
- II: mod/severe headache/neck stiffness/+/- cranial nerve deficits
- III: confusion/lethargy/mild focal signs
- IV: stupor/hemiparesis
- V: coma/posturing

CT 90% sensitive, if negative must have 12 hour LP for xanthochromia

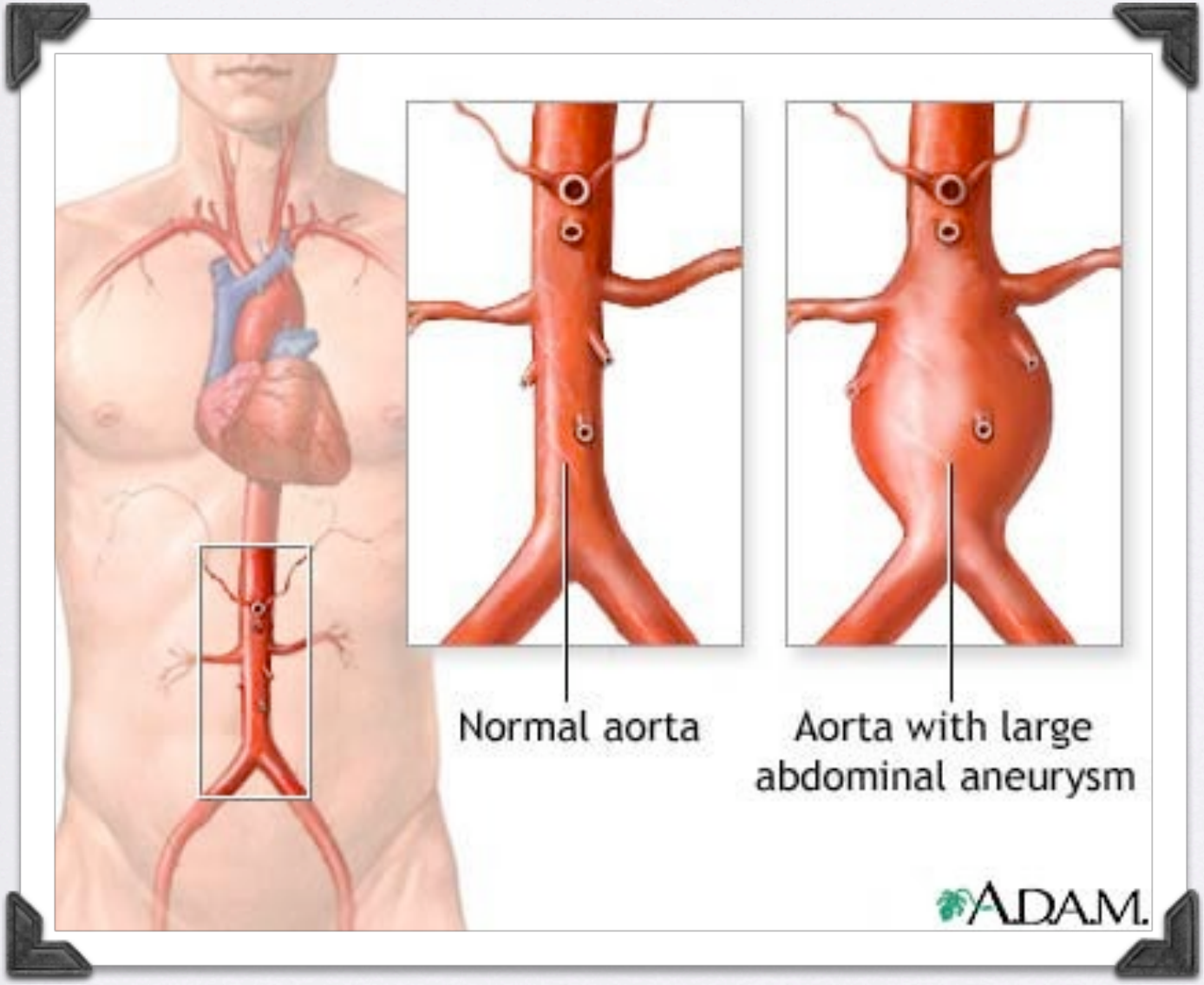
ECG, broad T or inv, ST elevation/depression, long QT, U waves

Treatment

- ABC, & IV fluids, oxygen
- ETT & ITU if reqiured i.e. reduced GCS
- Nimodipine 60mg q6h (neurosurgeons)
- Ref. neurosurgeons, either clipping of aneurysm or coils (radiologically)
- Vasospasm 3-12d
- Codiene rather than morphine, but DO use anti-emetics if using opioids

Case 2

70yr old man, smoker with hypertension, presents after a collapse with LOC, and has central abdominal pain radiating to the back. Pulse 120, BP 70/40, tender abdomen with normal femoral pulses



Abdominal aortic aneurysm

Pathogenesis

- Male, >65, smoking, atherosclerosis, hypertension, COPD
- Focal dilatation >50%
- Occurs 5.9% males at 80 and 4.5% women at 90
- 5-yr risk of rupture
- <4cm: 2%
- 4-5cm: 3-12%
- >5cm: 25-41%

Clinical features

- Ruptured, mostly dead, but some
- Syncope, hypotension, tachycardia, back/abdominal/ flank-groin (10%) pain
- Pulsatile abdominal mass only in 50%
- Reduced/asymmetrical lower limb pulses

Diagnosis

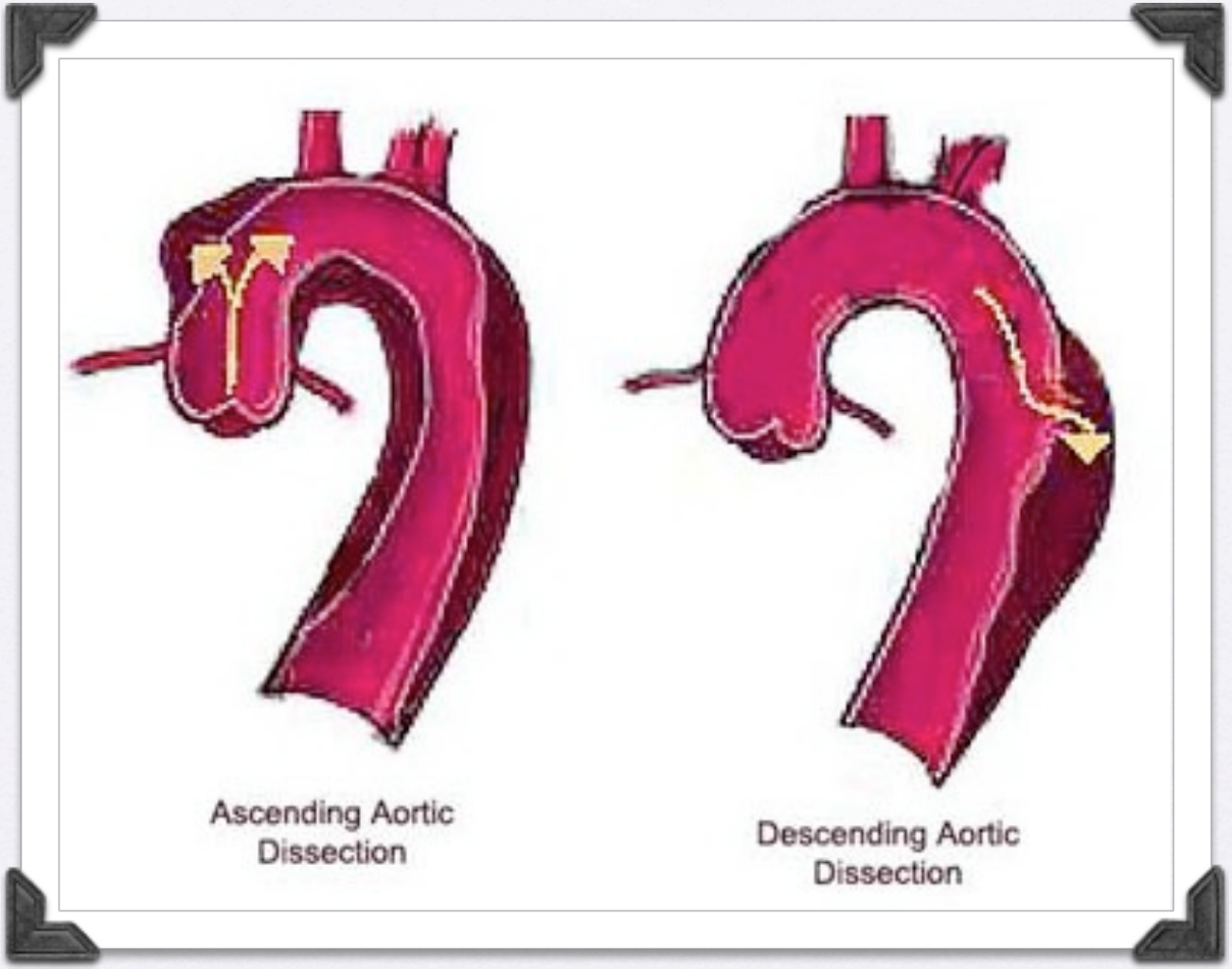
- CT if stable (good at picking up rupture)
- Straight to theatre if unstable
- USS if stable-finds aneurysm, unreliable at detecting rupture
- Aortography (underestimates because of mural thrombus)

Treatment

- O2, lie flat
- 2x14G and cautious saline (keep systolic <100)
- Cross match 6 units, and FFP's
- Vascular surgeons urgently
- 50% die on table
- Time bomb so act URGENTLY+++

Case 3

65yr old woman, previous angina, severe chest pain and between shoulder blades. Sweating, pale, pulse 100/min, with BP 100/60. Pulse and BP slightly reduced in left arm. Normal ECG.



Dissecting thoracic aortic aneurysm

Pathogenesis

- Intimal tear creating false lumen
- ↑ family history, and in Marfans/Ehler-Danlos
- 6-8th decades, male:female 3:1
- Hypertension/pregnancy/trauma/cocaine/α1-antitrypsin deficiency
- 29-38% mortality with surgery,
- Re-dissection 13% @ 5 yrs, 23% @10yrs

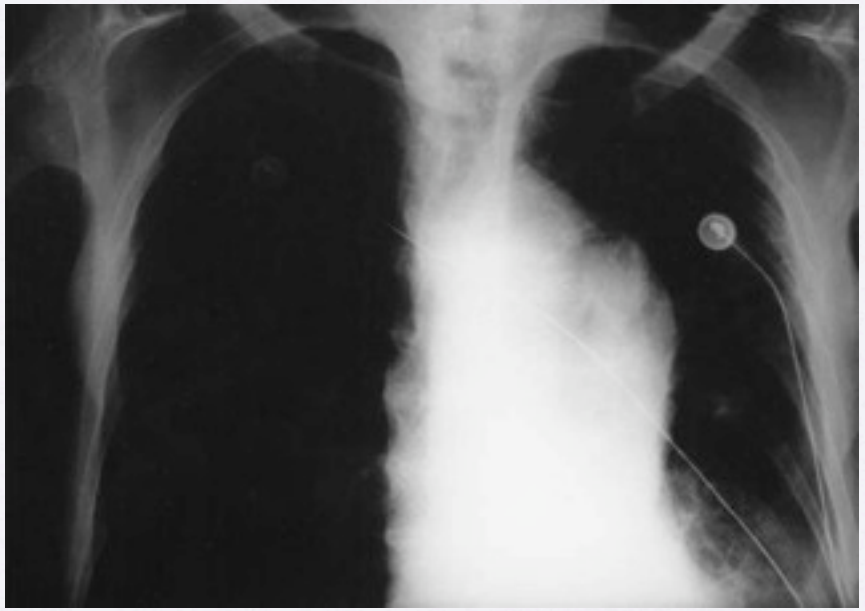
Clinical features

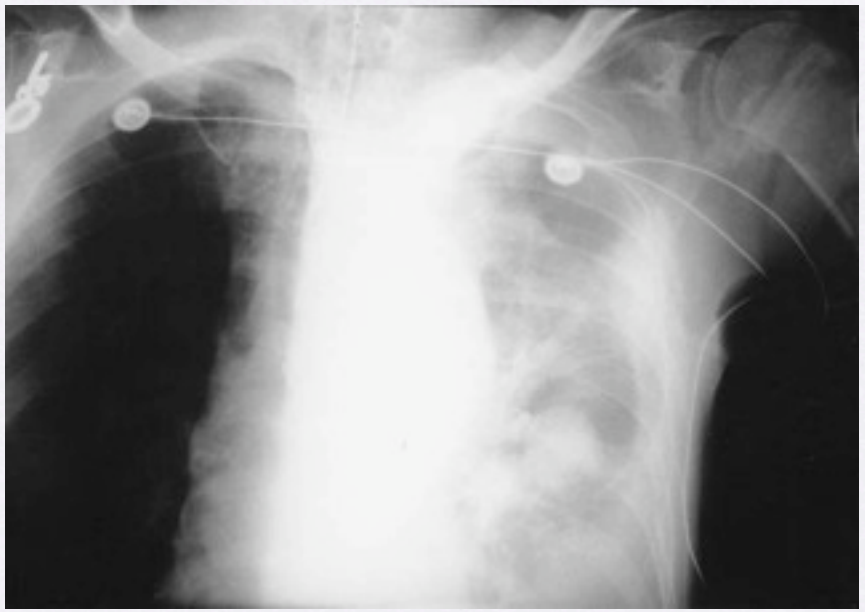
- Sudden tearing pain, anterior chest to interscapular region (80-90%), back pain
- Hypertension (60-70%), hypotension
- Syncope, CCF, CVA
- Diastolic murmur (50%)
- Abdo pain, nausea, vomiting
- Extremity weakness
- Peripheral pulse deficit ONLY in 40-50%

Diagnosis

- Contrast CT, MRI,
- Aortography (95-99%)
- Transoesophageal ECHO (good if patient ill)
- CXR: wide mediastinum, blurring of aortic knob, left pleural effusion
- ECG:
  - AMI 10-20%, if negative supports diagnosis
  - Left ventricular hypertrophy
  - Pericarditis changes

CXR changes



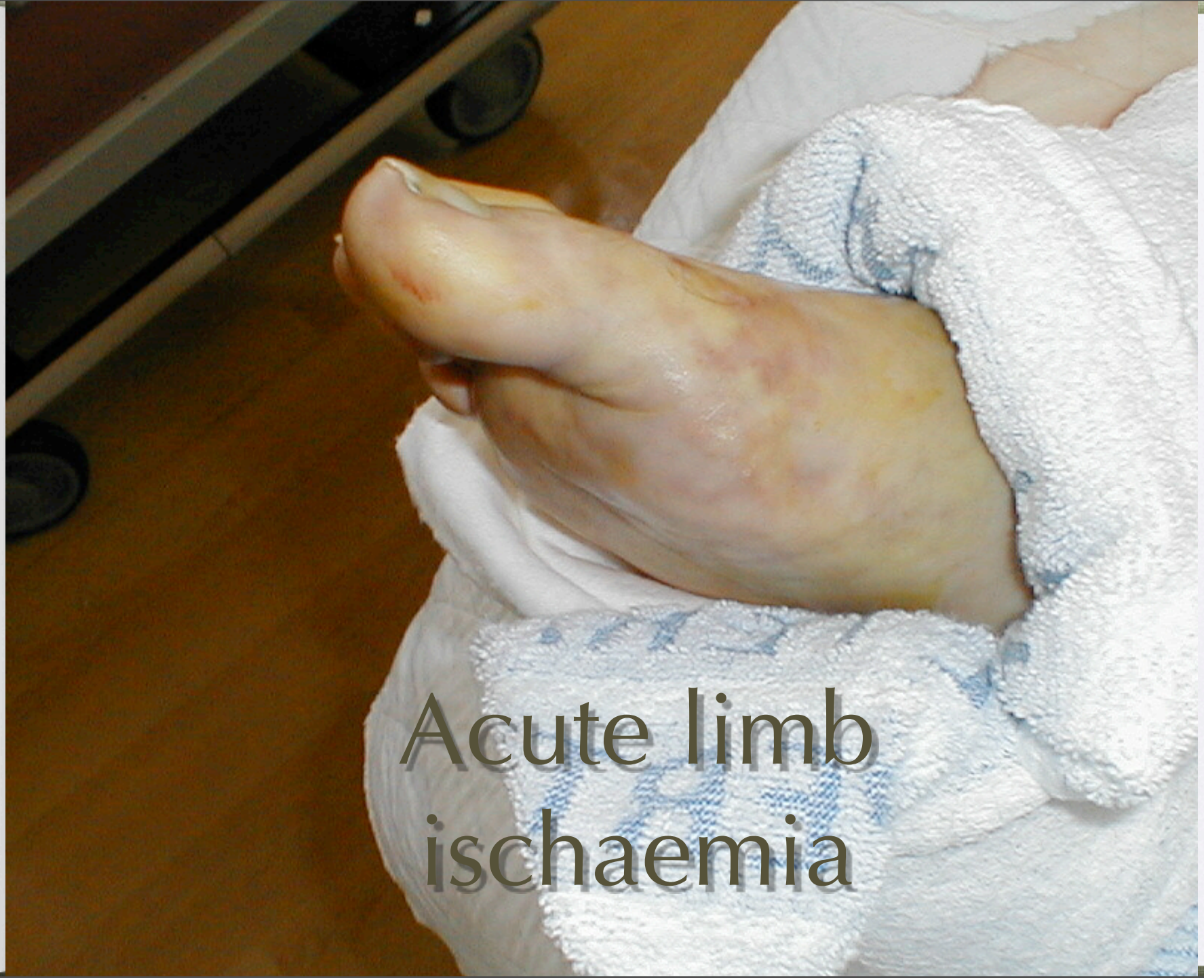


Treatment

- O2, 2 x 14G, monitor, x-match 6 units
- Beta blockers (esmolol/labetolol)
- Morphine & cyclizine
- Emergency vascular surgery
- If suspected in ‘cardiac’ chest pain, don’t thrombolyse!!!!!

Case 4

70yr old, male, smoker, diabetic hypertensive has history of bilateral calf pain after walking 50 yards, eased after resting for a few minutes. Presents with half hour history of right lower leg pain, cold, pale, numb. No pulses palpable.


Acute limb
ischaemia

Pathogenesis

- Cf Beurgers disease
- Thrombotic
- Low flow/hypercoagulable
- Embolic
- AF, MI, valve disease, endocarditis, prox. Aneurysm, atherosclerotic plaques, mycotic

Clinical features

- Chronic, claudication, shiny hairless skin, ulcers
- The famous 6 Ps
  - Pain
  - Pallor
  - Paraesthesia
  - Paralysis
  - Pulseless
  - Perishingly cold OR Poikilothermia

Diagnosis

- Doppler for pulses
- Angiography
- ECG for signs of IHD (atherosclerosis)

Treatment

- On the table within 4 hours (vascular)
- Fogerty catheter/surgical options/bypass graft/PTCA/ intra-arterial agents
- Aspirin
- Heparin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