Subarachnoid Haemorrhage

Risk Factors for aneurysm rupture:
- Smoking and alcohol
- Age 20 – 65 most common
- Hypertension (BP > 160/100 high risk)
- Coagulopathy does not cause rupture, but is associated with a poor outcome

Causes / associations:
- Berry aneurysm (80%)
- AVM
- Polycystic kidney disease
- SLE
- Moyamoya disease
- Metastatic tumours eg atrial myxoma
- Choriocarcinoma
- Vasculitis (very rare)
- Fungal / bacterial infections (very rare)

Prodromal events
Signs and symptoms precede aneurysm rupture in up to 50% of cases. These may be subtle. They may be caused by sentinel leaks, mass effect of aneurysm (focal neurological) or emboli (TIA)
- Headache (48%) – sudden, severe. May be associated with nausea, vomiting, photophobia, malaise, neck pain
- Dizziness (10%)
- Orbital pain (7%) – usually mass effect
- Sensory or motor disturbance (6%) – including 3rd nerve palsy (dilated pupil & ‘down and out’ gaze)
- Diplopia (4%)
- Visual loss (4%)
- Seizures (4%)
- Ptosis (3%)
- Bruits (3%)
- Dysphasia (2%)

Symptoms & signs of SAH
Headache: severe ‘worst ever’, sudden, maximal intensity within 5 minutes. Up to 70% occur with exertion, including straining and sexual intercourse, but may be at rest
Meningism: occurs in 80% but may take several hours to manifest
Sudden LOC: 45%, usually transient
Seizure: 10 – 25%
Subhyaloid retinal haemorrhage: 25%
Reduced GCS / Focal neurology: 25%

Acute severe headache suggestive of SAH
Insert iv cannula and take blood for FBC, clotting, VBG, ECG. Assess GCS

GCS 15
- World Federation of Neurological Surgeons Grading Scale
  - Grade 1 GCS 15 no focal neurological deficit
  - Grade 2 GCS 13-14 no focal neurological deficit
  - Grade 3 GCS 13-14 with focal neurological deficit
  - Grade 4 GCS 7-12 +/- focal neurological deficit
  - Grade 5 GCS 3-6 +/- focal neurological deficit

CT brain
To be completed within 1 hour of request. Admit to CDU if stable

SAH Unlikely
Discuss with senior
Risk of SAH less than 1%
Risks of LP:
- Low pressure headache up to 10%
- Risk of local infection and epidural haematoma less than 1%
- If high history discuss with neurosurgery (highest risk age 30 – 65)
Discharge with clinical advice

SAH Possible
Refer Medical SpR bleep 627
LP is HIGH RISK if GCS < 15 – discuss with consultant
LP to be carried out minimum 12 hours post onset of symptoms (may remain positive up to 1 week later)
The sample must reach RLH lab 0900-1600
Paired serum bilirubin needed

CT normal
Completed within 6 hours of onset

SAH unlikely
Discuss with senior
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SAH Confirmed
Transfer CT via IEP (PACS office 8773 or bleep 108)
Refer Neurosurgical SpR #6116 45649 or mobile 07795 245 709
Management:
- Discuss with Neurosurgery
- Consider need for intubation
- Maintenance 0.9% saline iv
- BP control – aim for sBP < 180 mmHg but > 120 mmHg
CAUTION if chronic HT or low GCS
Prescribe either:
- Metoprolol 2.5 mg iv, slow boluses (max 10 mg)
or
- GTN infusion 1 to 10 mL per hour (50 mg in 50 mL 0.9% saline) (20 to 200 mcg per min)
Arrange critical transfer via 020 7902 2511

LP positive
Or non-diagnostic

High clinical suspicion?
(good history, appropriate age, no history of chronic headaches)

No

Yes

GCS < 15
Management
Consider need for intubation:
- GCS 8 or less
- GCS rapidly deteriorating
- Patient agitated / uncooperative

LP positive
Or non-diagnostic

Yes

No

Refer Neurosurgeons
Via #6116 45649
Mobile 07795 245 709
Discuss non-diagnostic LP and clinical suspicion
Consider further imaging with MRI / MRA / CT angio

CT shows SAH
(if shows alternate diagnosis, exit pathway and manage as appropriate)

CT shows SAH
Confirm
GCS < 15
GCS 15
Move to Resus

Barts Health Acute Care Guideline Group
v1
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