Thunderclap headache & Acute neurology service

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Objectives

• Acute neurology service at Newcastle
• Overview of the headache history
• Four other important sinister headaches to think about on AMU and what to do.
Acute neurology service

- Likelihood of a patient with a neurological problem being seen by a neurologist varies a lot!
- Acute neurological problems account for 10-20% of acute medical admissions.
- Recent ABN survey; 20% of 189 hospitals had access to a neurologist on 3 days or less.
- Some DGHs have no access to a neurologist.

ABN acute neurology services survey 2017
Acute neurology service

• Since September 2017 – two consultant neurologists visit AMU/AMB care Mon, Weds, Fri.
• Teaching – post AMU handover – Neurologist now on the rota
• Neurology SpR on-call 24/7
• Neurology rapid access clinic – running for many years, daily Mon-Fri.
• Local audit; 50% headaches > epilepsy > movement disorders
Headache; history, history, history

- What were they doing at the time
- Location & radiation
- Time to peak severity – try to get as specific as possible
- Postural component
- Associated features
  - photo/phono/osmophobia; n&v; evolving sensory or motor symptoms; visual symptoms – positive, negative, evolution over time; autonomic symptoms
  - Transient visual obscurations – ‘white out’ or ‘grey out’ sometimes with valsalva
  - Pulsatile tinnitus
History, history, history

• Behaviour during headache
  • Lie down still and rest; close curtains; restless and pacing

• Current medication
  • Are they overusing analgesics (a talk for another day, but usually >10 days for 3 months); oral contraception; nasal decongestants

• Things that will point to a possible sinister headache
  • Prothrombotic; pregnancy; potential trauma; drastic change to ‘normal HA’

• Primary or secondary headache? (another talk for another day)
To think about when it’s not a SAH....
Cerebral Venous Sinus Thrombosis (CVST)

• Incidence: 5 per million
• Can cause thunderclap HA or progressive HA over days/weeks. Life threatening but treatable
• Risk factors linked to ‘Virchow’s triad’ – stasis of blood, changes in vessel wall, changes in blood composition
• Can cause symptoms related to increased ICP (because of impaired venous drainage) or focal damage from venous infarction/haemorrhage.
• 90% of patients have headache.
• Diagnostic challenge – isolated HA with no papilloedema in ~25%

Saposnik et al., Stroke. 2011;42:1158-1192
CVST

- **Always** make an attempt to check optic discs
- If doing an LP, measuring the pressure will help you (> 80% have raised pressure, some have mild raised CSF protein).
- You do **not** need to do an LP to confirm/diagnose it.
- We do not check d-dimers to help stratify risk
- CTV can give you good views and quick to get
- Rx – LMWH and then warfarin, discuss with neurology
- Consider looking for secondary causes
Carotid dissection
Horner’s syndrome

1\textsuperscript{st} neuron; hypothalamus to lateral aspect cord C8/T1 level
2\textsuperscript{nd} neuron; spinal cord to superior cervical ganglion
3\textsuperscript{rd} neuron; sup cervical ganglion to cranium via internal carotid artery.

Fibres innervate;
(1) Inf & sup tarsal (Muller) muscles on underside of levator palpebrae superioris – lift eyelid by 2mm
(2) Vasomotor fibres supply blood vessels of eye
(3) Dilator fibres innervate pupil
Carotid dissection & Horner’s

Antiplatelet treatment compared with anticoagulation treatment for cervical artery dissection (CADISS): a randomised trial

The CADISS trial investigators*

Summary
Background Extracranial carotid and vertebral artery dissection is an important cause of stroke, especially in young people. In some observational studies it has been associated with a high risk of recurrent stroke. Both antiplatelet drugs and anticoagulant drugs are used to reduce risk of stroke but whether one treatment strategy is more effective than the other is unknown. We compared their efficacy in the Cervical Artery Dissection in Stroke Study (CADISS), with the additional aim of establishing the true risk of recurrent stroke.

Methods We did this randomised trial at hospitals with specialised stroke or neurology services (39 in the UK and seven in Australia). We included patients with extracranial carotid and vertebral dissection with onset of symptoms
Reversible cerebral vasoconstriction syndrome (RCVS)

- More common in women, peaks around 40s
- Incidence unknown; maybe not as rare as we think

- Recurrent thunderclap headaches over ~1-4 weeks
- Headaches can be short lived, between 1-3 hours
- Can get neck pain, but look for carotid/vertebral dissection too
- Can be a trigger e.g sexual activity, medication, post partum
- Can have focal deficits if secondary haemorrhage/infarct

Ducros et al., Lancet Neurology 2012
RCVS

- Can cause subarachnoid haemorrhage at convexity, intracerebral haemorrhage and infarct
- Normal or near normal CSF
- Initial brain imaging can be normal
- Multifocal areas of vasoconstriction on imaging or formal angiography
Spontaneous intracranial hypotension

• Another treatable cause not to miss
• Always asking about HA in relation to posture is important
• Worse standing/sitting, relieved lying flat
• CSF pressure low (but don’t need to do LP to diagnose). Another reason to always measure CSF pressure when doing an LP.
• MRI with contrast
  • Pachymeningeal enhancement
  • Brain sagging – cerebellar tonsillar descent
  • Pituitary hyperaemia
  • Subdural collections/hygromas (late/worrying)

• Usually improve on own
  • Bed rest, lie flat, fluids, simple analgesics, time
  • If conservative measures fail, epidural blood patch is next step
Summary

• Think of other sinister headaches when the patient is not improving and SAH has been ruled out.
• Always make an attempt to check for papilloedema
• Make sure a subtle Horner’s syndrome has not been missed
• Always check CSF opening pressure if doing an LP
• There are some other causes of thunderclap headache (for another day)
• History is the key
Thank you.

Questions