Headache in the Emergency Department

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James speaks to Dr Katherine Spira about headache in the Emergency Department, a very common presentation, and how to manage an atypical presentation.

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About Dr Katherine Spira

Katherine is a neurologist working in private practice and at Prince of Wales Hospital, New South Wales, Australia. She has special interests in Headache and Obstetric Neurology. She completed her training in February 2018, having previously worked as a Junior Medical Officer at Liverpool Hospital, a Basic Physician Trainee in the Prince of Wales Network, and an Advanced Trainee at Blacktown, Prince of Wales and Royal Prince Alfred hospitals. Katherine loves looking after patients, medical education and being a mum to two beautiful baby girls.

Headache in the Emergency Department

With Dr Katherine Spira, Neurologist at Prince of Wales Hospital, New South Wales, Australia

Case

An 82-year-old man presents with a 2-week history of a right-sided headache and feeling unwell. At the beginning of the headache, he saw some rainbow lights in his right visual field which have come and gone throughout the episode. The headache is there constantly, varying between a dull ache and a severe throbbing pain. Part of his head is very sensitive to touch. It is always on the right side, as is the visual disturbance. There is no photophobia, phonophobia or osmophobia, nor any nausea or vomiting. He had two migraine headaches in high school with visual disturbances, nausea and photophobia but he hasn't had a headache since then.

1. What are the concerning features of this presentation?

- First headache in many years – new onset headache in a person >50 years of age is concerning
- Rainbow lights in vision not classical description of migraine aura

    - Visual disturbances can occur in migraine aura however this classically lasts 12 minutes then abates
    - Visual aura classically spreads in the visual field, then recedes
- Constancy of headache
- Ipsilateral
    - Although pain may affect one side of head during migraine attack, it typically shifts sides during and between attacks
- Sensitivity to touch on scalp – a feature of giant cell arteritis (GCA) or polymyalgia rheumatica
    - May indicate an association with a trigeminal neuropathy
- No features typically associated with migraine such as light and sound sensitivity or increased sense of smell
- The patient's age, scalp tenderness and systemic malaise may be suggestive of GCA which may threaten vision

2. Outline your assessment approach by the bedside

History

- Onset – sudden (particularly to elicit a thunderclap) or gradual?
- Character of the pain – throbbing vs dull ache vs sensitivity to touch
- Severity of pain
- Demographics of the patient
- Previous episodes
- Is this presentation of headache a dramatic change from usual migraine for the patient?
- Systemic – fever, neurological signs
- PMHx: malignancy (consider space occupying lesion [SOS]), antiphospholipid syndrome / vasculitides (increased risk of vascular events)
- Medications: misuse of analgesic medications (particularly opiates and triptans)

Examination

- Visual field assessment
    - Charles Bonnet syndrome: patients develop positive visual symptoms (lights, hallucinations) in the setting of vision loss
- Papilloedema
    - Papilloedema + headache requires urgent brain imaging
- Vital signs including fever
- Neck stiffness
- Full neurological examination

3. What are the red flags for a headache?

SNOOPPPPPP

- **S**ystemic – derangement of vital signs or signs on systemic examination (infective, inflammatory)
- **N**eurological – focal neurological signs (stroke [particularly posterior circulation strokes], SOS)
- **O**nset – sudden onset (subarachnoid haemorrhage, reversible cerebral vasoconstriction syndrome, aneurysms that haven't ruptured, dissections)
    - CT brain for subarachnoid haemorrhage – non-con better for visualising haemorrhage
        - Even in a patient with a history of malignancy, for whom you will go on to perform a CT brain with contrast, a CT brain without contrast should be ordered first to exclude a bleed
    - CT angiogram (CTA) to look for unruptured aneurysms and reversible cerebral vasoconstriction syndrome and dissection
        - CTA: there are multiple phases the contrast washes through and they try to capture the Circle of Willis
        - If querying a carotid dissection, order a CT angiogram of the head and neck
    - Lumbar puncture
        - Necessary to exclude meningitis
- **O**nset > 50 years of age
- **P**attern change
- **P**rogressive headache
- **P**recipitated by Valsalva maneuver – vascular malformations
- **P**ostural aggravation – is it worse when the patient sits up?
- **P**apilloedema
- **P**regnancy / post-partum – prothrombotic state

4. What guides the indication for imaging in a patient with a headache?

- A patient with any of the red flags listed above
- Anything atypical

5. What blood tests are helpful in our case?

- ESR & CRP – inflammatory markers, which will be elevated in GCA

6. What is the treatment of temporal arteritis?

- Steroids – to reduce inflammation
    - Oral prednisolone
    - If imminent threat to vision, IV methylprednisolone
- Do not wait for a temporal artery biopsy result to commence steroids

Take home messages

- Anyone who has presented to the ED multiple times needs investigation
- The SNOOPPPPPP mnemonic is important in recognising red flags
    - In any patient whose first headache is >50 years of age, this requires imaging
- Headaches should be taken seriously – they are disabling even if not life-threatening
- Secondary headaches exist and require a high index of clinical suspicion

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- Headache

Tags: #atypical presentation,#diagnosis,#Emergency Medicine,#headache,#headache differentials,#imaging,#migraine,#neurology,#red flags,#subarachnoid haemorrhage,#temporal arteritis,#trigeminal neuralgia