Context for the session

Clinical presentation and assessment of patients with headaches.

The Intended Learning Outcomes are to be able to:

- Compare and contrast common causes of headaches, describe the red flags that indicate serious causes
- Describe how to gather a well-rounded impression of a patient presenting with headaches
- Understand how to assess cranial nerves

Students will have covered the following in the two-week headache block:

In **Case-Based Learning**: a 90-year-old woman who presents to the emergency department with a skin tear of her left forearm, instability, right sided headaches, and a left homonymous hemianopia (brain tumour).

In **Lectures, workshops and practicals**:

- Cerebral circulation, intracranial pressure
- Bleeding and imaging
- Intracranial and extracranial infections leading to headache
- Primary and secondary tumours of the brain
- Lumbar puncture
- Differential diagnosis of headache
- Pathophysiological and pharmacological principles of headache management
- Headache as a presentation of domestic violence
- Cranial nerve examination (students undertake a practical session on this the week prior to coming to you – see additional PDF for details)
- Applied Anatomy and Imaging Practical (headache).

Specifics for Headache in GP clinical contact

Introduction

The key learning goal for this session is for students to apply their knowledge by interviewing and examining patients, preferably someone with a history of headaches.

As with the previous sessions:

- refer to the Year 2 GP handbook, which covers the information common to all sessions.
- use the below "session plan" as a guide on how to use your time with your group

Allow time for:

- introductions (reflecting on any learning/action points from the previous session, urinary symptoms)
- student-led interaction with patient(s), and
- debriefing the group (usually without the patient present) to ask questions and consolidate learning.
- **Additionally for this session:** Please allow time for individual feedback and ask students about their creative reflective work. While you speak with individual students the other students should be completing feedback (see email information)

(Expert) patients

Suitable patients for the block are people with:

- current chronic/recurrent headaches e.g. migraine
- previous acute headache e.g. subarachnoid haemorrhage, temporal arteritis

and/or anyone (preferably with a neurological diagnosis) willing to let students practice their examinations.

Tasks

Start by assessing their learning needs:

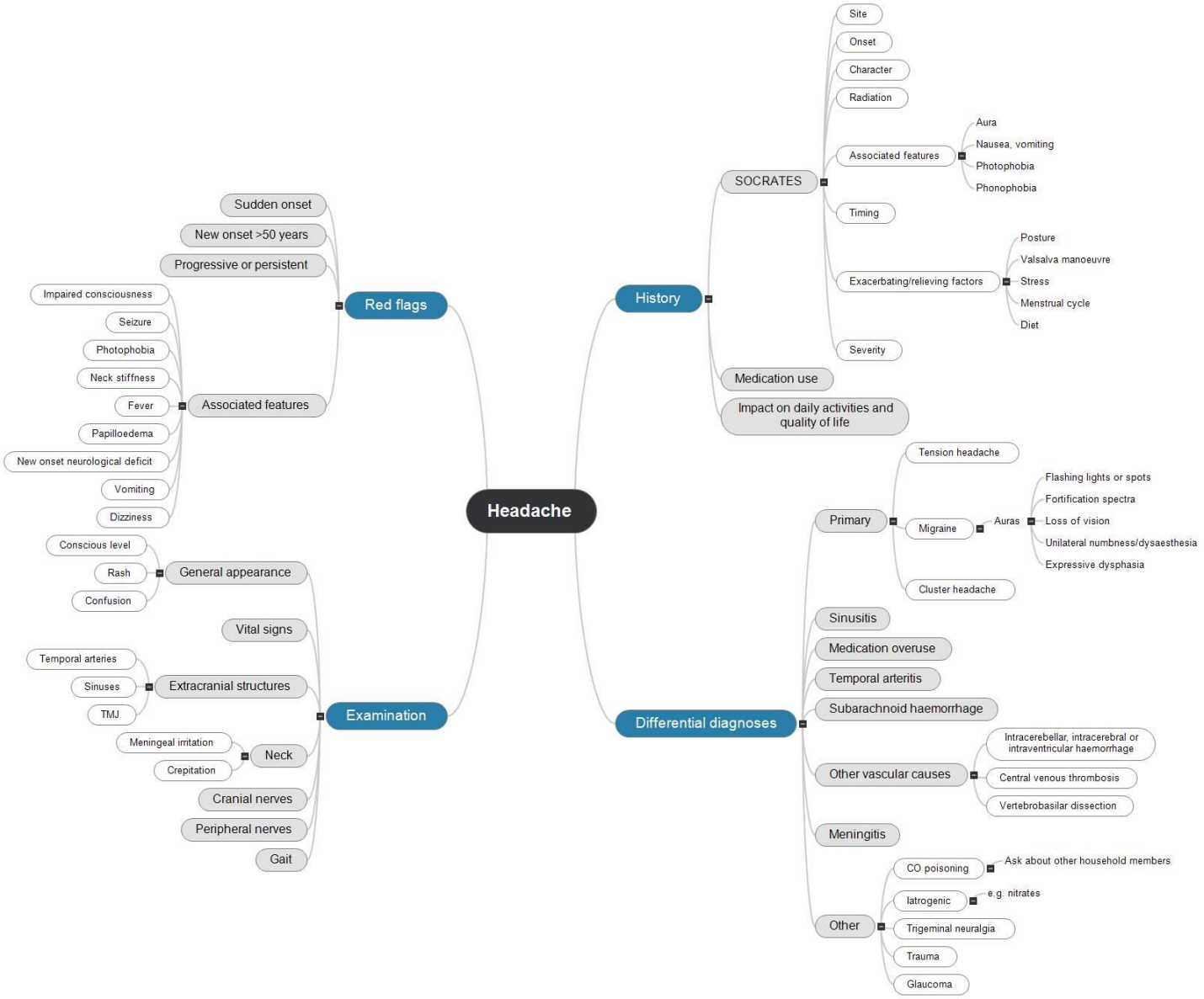
- discuss the students' learning during the headache block
- what do they feel confident in and what are they unsure about?

Prepare for the session. Brainstorm (use the supplied mind map, if you find this helpful):

- What are the common causes of headache, how to assess and differentiate between causes of headache. What specific areas of the history are important?
- Get the students to think about what sorts of symptoms patients present with for each of the three listed primary headache types. Encourage them to write down what patients might say rather than the "textbook" answers, and to have a think about how they might elicit that information.
- As a GP, when you find out the next person has "headache", how do you prepare? What do you need to do or know before you phone the patient or call them in? What information is particularly useful and why?
- Are there any key risk factors for types of headaches that you need to know about before you see the patient e.g. temporal arteritis is usually diagnosed in people over the age of 50.

Follow the usual timetable of talking to and examining one or two patients:

- Students are introduced to cranial nerve examination in a campus-based tutorial session (see attached PDFs on Cranial Nerve practical and **Cranial nerve checklist** so that you know what the students have covered). You may not have time for a full cranial nerve examination; if not, you could demonstrate what aspects you would particularly do in a patient with new or concerning headaches – please **at least** get the students try fundoscopy (how to hold and use a fundoscope; identify the fundus and optic disc)


Headache
History
SOCRATES
Site
Onset
Character
Radiation
Associated features
Aura
Nausea, vomiting
Photophobia
Phonophobia
Timing
Exacerbating/relieving factors
Posture
Valsalva manoeuvre
Stress
Menstrual cycle
Diet
Severity
Medication use
Impact on daily activities and quality of life
Differential diagnoses
Primary
Tension headache
Migraine
Auras
Flashing lights or spots
Fortification spectra
Loss of vision
Unilateral numbness/dysaesthesia
Expressive dysphasia
Cluster headache
Sinusitis
Medication overuse
Temporal arteritis
Subarachnoid haemorrhage
Other vascular causes
Intracerebellar, intracerebral or intraventricular haemorrhage
Central venous thrombosis
Vertebrobasilar dissection
Meningitis
Other
CO poisoning
Ask about other household members
Iatrogenic
e.g. nitrates
Trigeminal neuralgia
Trauma
Glaucoma
Red flags
Sudden onset
New onset >50 years
Progressive or persistent
Associated features
Impaired consciousness
Seizure
Photophobia
Neck stiffness
Fever
Papilloedema
New onset neurological deficit
Vomiting
Dizziness
Examination
General appearance
Conscious level
Rash
Confusion
Vital signs
Extracranial structures
Temporal arteries
Sinuses
TMJ
Neck
Meningeal irritation
Crepitation
Cranial nerves
Peripheral nerves
Gait

Information given to students

These are brief, quick reference notes and do not replace your textbooks.

Some common headaches that present in clinical practice:

- Tension headache
- Migraine
- Cluster headache (less common but important to recognise)
- Medication-overuse headache/chronic daily headache

Background

"Headache affects nearly everyone at least occasionally. It is a problem at some time in the lives of an estimated 40% of people in the UK. It is one of the most frequent causes of consultation in both general practice and neurological clinics. In its various forms, headache represents an immense socioeconomic burden." (British Association for the Study of Headache)

Ways of classifying headaches:

- Primary headaches — not associated with an underlying condition, includes migraine, tension-type headache, and trigeminal autonomic cephalgias (including cluster headache).
- Secondary headaches — precipitated by another condition or disorder (local or systemic),

The majority of headaches are primary:

- Tension-type headache in its episodic subtype affects up to 80% of people from time to time, many of whom refer to it as "normal" or "ordinary" headache. Consequently, they mostly treat themselves without reference to physicians using over-the-counter (OTC) medications and generally effectively. Nevertheless, it can be a disabling headache.
- Migraine occurs in 15% of the UK adult population, in women more than men in a ratio of 3:1. An estimated 190,000 attacks are experienced every day, with three quarters of those affected reporting disability. Whilst migraine occurs in children (in whom the diagnosis is often missed) and in the elderly, it is most troublesome during the productive years (late teens to 50's). As a result, over 100,000 people are absent from work or school because of migraine every working day. The cost to the economy may exceed £1.5 billion per annum.

History

There are no diagnostic tests for primary or medication-overuse headache. This means that the history is vital in making the diagnosis, and time to elicit an accurate history +/- the keeping of a diary for the pattern of attacks can help make a diagnosis.

A key aspect to ascertain if a patient presents with headache is to decide whether there is a serious cause for the headache which needs urgent intervention. The following features of a headache should alert you to the possibility of an alternative, serious diagnosis:

- Onset after age of 50. Migraine does not usually start at this age
- Worst headache patient has ever had/very rapid onset (subarachnoid haemorrhage)
- History of cancer, especially lung or breast (cerebral metastasis)
- Headache that progressively gets worse over days (tumour or cerebral abscess)
- Headache that wakes patient at night (tumour)
- Early morning vomiting (raised intracranial pressure)
- Unilateral loss of power (TIA/stroke)

- Seizure (tumour)
- Weight loss (tumour or cerebral TB)
- Altered consciousness (meningitis)
- Fever (meningitis)
- Immunodeficiency

It's important to ensure you fully appreciate the ideas the patient has about what's going on, the underlying fears and worries they may have, whether they want reassurance, diagnosis, medication, or referral, what impact the headache is having on their life, and how it is making them feel (ICEIE).

- **Site:** Global or a specific area? Pain & tenderness in the temples in someone over 50 can indicate temporal arteritis, a band like pain round the head indicates tension headache, one sided headache may be migraine, the occiput may be a subarachnoid haemorrhage.
- **Onset:** When and how (sudden/gradual) did the headaches start? Beware the sudden headache at the back of the head, it could indicate a subarachnoid bleed. These tend to be severe, and the patient may describe feeling like they've been hit across the back of the head.
- **Character:** nature and quality of pain; state of health between attacks completely well, or residual or persisting symptoms**.** A migraine may be severe or have neurological features, but patients are symptom-free between episodes.
- **Radiation**
- **Associated symptoms**: a fever or systemic illness may indicate a viral headache or meningitis; in migraine, patients may experience aura or transient neurological features.
- **Timing:** How frequent, and what pattern and duration (especially distinguishing between episodic and daily or unremitting)?
- **Exacerbating/relieving factors?** Predisposing and/or trigger factors; aggravating and/or relieving factors; what medication has been and is used, and in what manner?
- **Severity:** Intensity of pain
- **Impact:** What does the patient do during the headache? How much is activity (function) limited or prevented?
- **Past and family history:** Family history of similar headache
- **Patient** perspective: Concerns, anxieties, fears about recurrent attacks, and/or their cause**.** What else might be going on their lives? What is the background/context to the problem?

Consider using a headache diary to aid the diagnosis of primary headaches and to monitor effectiveness of treatment (NICE CG150). Ask the person to record the following for a minimum of 8 weeks:

- frequency, duration, and severity of headaches
- any associated symptoms
- all prescribed and over the counter medications taken to relieve headaches
- possible precipitants
- relationship of headaches to menstruation

Table 1: Headache features according to headache type (from NICE CG150)

Headache feature	Tension-type headache	Migraine (with or without aura)	Cluster headache
Pain location (can be in the head, face or neck)	Bilateral	Unilateral or bilateral	Unilateral (around the eye, above the eye and along the side of the head/face)
Pain quality	Pressing/tightening (non-pulsating)	Pulsating (throbbing or banging in young people aged 12 to 17 years)	Variable (can be sharp, boring, burning, throbbing or tightening)
Pain intensity	Mild or moderate	Moderate or severe	Severe or very severe
Effect on activities	Not aggravated by routine activities of daily living	Aggravated by, or causes avoidance of, routine activities of daily living	Restlessness or agitation
Other symptoms	None	Unusual sensitivity to light and/or sound or nausea and/or vomiting Symptoms of aura can occur with or without headache and: are fully reversible; develop over at least 5 minutes; last 5 to 60 minutes Typical aura symptoms include visual symptoms such as flickering lights, spots or lines and/or partial loss of vision; sensory symptoms such as numbness and/or pins and needles; and/or speech disturbance	On the same side as the headache: red and/or watery eye nasal congestion and/or runny nose swollen eyelid forehead and facial sweating constricted pupil and/or drooping eyelid
Duration of headache	30 minutes to continuous	4 to 72 hours in adults 1 to 72 hours in young people aged 12 to 17 years	15 to 180 minutes

Examination

The following may be helpful:

- Pulse & BP
- Test for neck stiffness
- Palpate scalp for tenderness
- Fundoscopy
- Examine cranial nerves.
- Assess power & co-ordination in all 4 limbs

Assessing cranial nerves

Guide to the rapid assessment of the cranial nerves (from Macleod's Clinical Examination, Chapter 7: The nervous system)

Table 2: Cranial nerves

Number	Name	Assessment	Abnormalities/symptom
I	Olfactory	Sense of smell, each nostril	Anosmia/parosmia
II	Optic	Visual acuity Visual fields Pupil size and shape Pupil light reflex Fundoscopy	Partial sight/blindness Scotoma; hemianopia Anisocoria Impairment or loss Optic disc and retinal changes
III	Oculomotor	Light and accommodation reflex	Impairment or loss
III, IV, VI	Oculomotor, trochlear and abducens	Eye position and movements	Strabismus, diplopia, nystagmus
V	Trigeminal	Facial sensation Corneal reflex Muscles of mastication Jaw jerk	Impairment, distortion or loss Impairment or loss Weakness of chewing movements Increase in upper motor neuron lesions
VII	Facial	Muscles of facial expression Taste over anterior two-thirds of tongue	Facial weakness Ageusia (loss of taste)
VIII	Auditory	Whisper and tuning fork tests Vestibular tests	Impaired hearing/deafness Nystagmus and vertigo
IX	Glossopharyngeal	Pharyngeal sensation	Not routinely tested
X	Vagus	Palate movements	Unilateral or bilateral impairment
XI	Accessory	Trapezius and sternomastoid	Weakness of scapular and neck movement
XII	Hypoglossal	Tongue appearance and movement	Dysarthria and chewing/swallowing difficulties

There are several (some rude) mnemonics to remember the names of the nerves in order: **Ooh, Ooh, Ooh, to touch and feel very good velvet. Such heaven!** Olfactory (CNI), Optic (CNII),

Oculomotor (CNIII), Trochlear (CNIV), Trigeminal (CNV), Abducens (CNVI), Facial (CNVII), Vestibulocochlear (or auditory CNVIII), Glossopharyngeal (CN IX), Vagus (CN X), Spinal accessory (CNXI), Hypoglossal (CNXII)

What next?

Acknowledge that headache is a valid medical disorder that can have a significant impact on the person and their family or carers.

Give a positive diagnosis, including:

- an explanation of the diagnosis
- reassurance that other pathology has been excluded and

Discuss the options for management.

- Explain the risk of medication overuse headache to people who are using acute treatments for their headache disorder.
- Provide information about support organisations.

Resources

Core reading is available via the medical library:

- Macleod's Clinical diagnosis; and
- Macleod's Clinical Examination

Guidelines:

- NICE CG150 "Diagnosis and management of Headache in the over 12s"
- (BASH) For Clinicians - BASH

Headache specific resources:

- Migraine trust charity: https://www.migrainetrust.org/
- Cluster headache charity: https://ouchuk.org/
- Giant Cell Arteritis: https://www.versusarthritis.org/media/24271/giant-cell-arteritis-information-booklet-nov2021.pdf
- Early diagnosis of brain tumours: https://www.headsmart.org.uk/

Cranial nerve examination:

- Bristol Neuroscientists: The cranial nerve examination
- Geeky Medics: The cranial nerve OSCE examination https://geekymedics.com/cranial-nerve-exam/