HEADACHE

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Headache Impact

Affects 95% population during lifetime -problematic in 40%

Significant socioeconomic burden

- Over 100,000 people are absent from work or school because of migraine every working day
- Cost to the economy may exceed £1.5 billion per annum.
- Chronic tension headache- high morbidity and may be substantially disabled; many are chronically off work.

HOWEVER: evidence **under-diagnosed and under-treated**

Primary headaches

1. Migraine, *including:*
1.1 Migraine without aura
1.2 Migraine with aura

2. Tension-type headache, including:
2.1 Infrequent episodic tension-type headache
2.2 Frequent episodic tension-type headache
2.3 Chronic tension-type headache

3. Cluster headache and other trigeminal autonomic cephalalgias, *including:*
3.1 Cluster headache

4. Other primary headaches

Secondary headaches

5. Headache attributed to head and/or neck trauma, *including:*
5.2 Chronic post-traumatic headache

6. Headache attributed to cranial or cervical vascular disorder, *including:*
6.2.2 Headache attributed to subarachnoid haemorrhage
6.4.1 Headache attributed to giant cell arteritis

7. Headache attributed to non-vascular intracranial disorder, *including:*
7.1.1 Headache attributed to idiopathic intracranial hypertension
7.4 Headache attributed to intracranial neoplasm

8. Headache attributed to a substance or its withdrawal, *including:*
8.1.3 Carbon monoxide-induced headache
8.1.4 Alcohol-induced headache
8.2 Medication-overuse headache
8.2.1 Ergotamine-overuse headache
8.2.2 Triptan-overuse headache
8.2.3 Analgesic-overuse headache

9. Headache attributed to infection, *including:*
9.1 Headache attributed to intracranial infection

10. Headache attributed to disorder of homoeostasis

11. Headache or facial pain attributed to disorder of cranium, neck, eyes, ears, nose, sinuses, teeth, mouth or other facial or cranial structures, *including:*
11.2.1 Cervicogenic headache
11.3.1 Headache attributed to acute glaucoma

12. Headache attributed to psychiatric disorder

Neuralgias and other headaches

13. Cranial neuralgias, central and primary facial pain and other headaches, *including:*
13.1 Trigeminal neuralgia

14. Other headache, cranial neuralgia, central or primary facial pain

**This table is a simplification of the IHS classification*

Objectives

- **Assessment** : history , examination and investigation
- **Red Flags/ Diagnoses not to miss**
- **Guidance on who to refer**
- **Diagnosis and Management**
  - Tension headache
  - Migraine- Episodic and Chronic
  - Medication over use
  - Trigeminal autonomic cephalgia: Cluster headache

HISTORY

- **Postion** : Unilateral/ bilateral Frontal occipital retro-orbital
- **Nature of pain**: Throbbing/ band-like/ sharp/dull
- **Onset** sudden /gradual-time to reach maximal intensity
- **Associated symptoms**:

  Fever/ rash/ neck stiffness
  Nausea/vomiting, photo/phonophobia
  Autonomic symptoms
  Focal neurological symptoms:
  Sensory/motor/speech/visualdisturbance
  Scalp sensitivity/ Jaw claudication
- **Triggers**: neck movement/ foods/ alcohol etc
- **Exacerbating/relieving factors**
- **Duration/Frequency**

HISTORY - continued

Systemic symptoms : weight loss, arthralgia, sweats

Sleep disturbance/ snoring

Comorbidities/ PMH – *implication for diagnosis and management*

- Previous history of primary headache eg migraine
- Hypertension, IHD,Asthma, Hypermobility, previous/current malignancy, thrombosis, immunsuppression

Drug history- *current medication/ new changes*

- birth control pill/ HRT
- analgesics

Family history : FH of headache, thrombosis, Intracranial aneurysm

ASSESSMENT- EXAMINATION

- Blood pressure, temperature
- Neurological examination including fundoscopy
- Temporal arteries: palpable, tender, pulsatile
- Tempomandibular Joint
- Neck
- Other : raised BMI, hypermobility, acromegalic features

Consider further investigation/ referral- NICE Guidelines

- **Sudden-onset** headache reaching maximum intensity within 5 minutes
- Headache **triggered by cough**, valsalva or sneeze ,exercise
- Orthostatic headache
- Symptoms suggestive of giant cell arteritis
- Symptoms and signs of acute narrow angle glaucoma
- Substantial change in the characteristics of their headache
- Worsening headache with **fever**
- New-onset **neurological deficit**
- New-onset **cognitive dysfunction**
- Change in **personality**
- Impaired level of **consciousness**
- Recent (typically within the past 3 months) **head trauma**
- New onset headache in a patient with a **history malignancy**
- New onset headache in a patient with a history of HIV

Headache diaries

- Frequency
- Duration
- Severity
- Associated symptoms
- All prescribed and over the counter medications taken to relieve headaches

Triggers/ precipitants

Relationship to menstruation

DIAGNOSIS AND MONITORING RESPONSE TO TREATMENT

(available on the BEST website)

Sheffield headache diary - Month 1

Month and year: .....

Patient's name: .....

Hospital number: ..... NHS number: .....

Note: if the pain lasts all day without a break and is still present going to sleep then you can write "all day"

Date	How severe was your headache today? – pick one of… **No headache = 0 Mild = 1 Moderate = 2 Severe = 3**				Approximately how long did the headache last in hours?	Did you have… Nausea and/or vomiting? If yes then 'X' the box	Did you have… Sensitivity to light and sound? If yes then 'X' the box	Did you take any medication for the headache? If so please record name and dose?
	0	1	2	3				
1								
2								
3								
4								
5								
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28								
29								
30								
31								
Totals								

Total headache days in month	
Total mirgraine days in month	

Sheffield headache diary - Month 1

Month and year: .....

Patient's name: .....

Hospital number: ..... NHS number: .....

Note: if the pain lasts all day without a break and is still present going to sleep then you can write "all day"

Date	How severe was your headache today? – pick one of… **No headache = 0 Mild = 1 Moderate = 2 Severe = 3**				Approximately how long did the headache last in hours?	Did you have… Nausea and/or vomiting? If yes then 'X' the box	Did you have… Sensitivity to light and sound? If yes then 'X' the box	Did you take any medication for the headache? If so please record name and dose?
	0	1	2	3				
1								
2								
3								
4								
5								

Sheffield headache diary - Example of completed diary

Month and year: ..... **July 2015** .....

Patient's name: ..... **A.N. Other** .....

Hospital number: ..... **AB 45679** ..... NHS number: ..... **12345678** .....

Note: if the pain lasts all day without a break and is still present going to sleep then you can write "**all day**"

Date	How severe was your headache today? – pick one of... **No headache = 0** **Mild = 1** **Moderate = 2** **Severe = 3**				Approximately how long did the headache last in hours?	Did you have... Nausea and/or vomiting? If yes then tick the box	Did you have... Sensitivity to light and sound? If yes then tick the box	Did you take any medication for the headache? If so please record name and dose?
	0	**1**	**2**	**3**				
1		X			6			
2			X		All day	X	X	Sumatriptan Paracetamol
3	X							
4	X							
5	X							
6		X			All day			
7		X			All day	X	X	Sumatriptan Sumatriptan
8			X		All day			
9			X	X	All day	X		
10			X		All day		X	Sumatriptan
11			X		All day			
12			X		All day	X	X	
13			X		All day	X	X	
14			X		All day	X	X	
15	X							
16	X							
17				X	All day	X		Sumatriptan Paracetamol
18				X	All day	X	X	Sumatriptan Paracetamol
19				X	All day	X		Sumatriptan Paracetamol
20				X	All day	X		Sumatriptan
21			X		7			
22			X		7			
23		X			6	X	X	
24			X		6			Paracetamol Sumatriptan
25			X		8			Paracetamol
26			X		4			
27		X			4	X	X	Sumatriptan Paracetamol
28		X			4			
29		X			4			
30	X							
31			X		All day			
Totals	6	7	14	5				

Total headache days in month	
Total mirgraine days in month	

Imaging- scan or not to scan?

NICE guidance:

Do **NOT** refer people diagnosed with tension-type headache, migraine, cluster headache or medication overuse headache for neuroimaging solely for reassurance

GPs have own guidelines for requesting brain imaging via ICE

Risk of headache with other symptoms being due to tumour

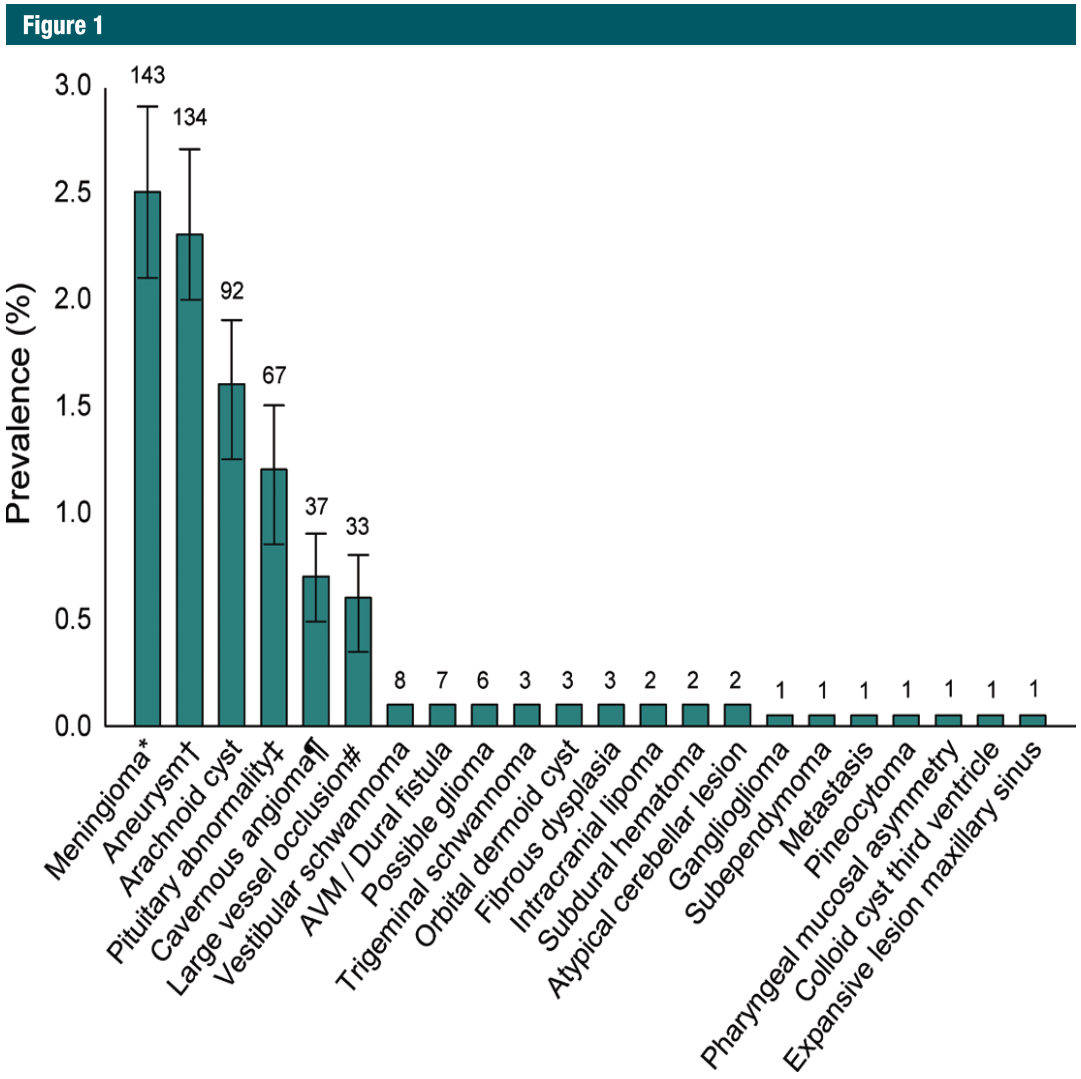
Red Flags (>1% risk headache due to tumour)

- Papilloedema
- New abnormal neurological signs
- History of cancer elswhere
- New cluster headache
- New seizure
- Significant alteration in consciousness, memory ,
- Confusion
- Impaired coordination

Incidental Findings on Imaging

Incidentally discovered findings on brain MR images that necessitate further diagnostic evaluation occurred in **3.2% of a middle-aged and elderly population**, but were generally without substantial clinical consequences.

Prevalence, clinical Management, and natural course of incidental Findings on Brain MR images: The Population- based Rotterdam Scan Study, Bos et al *Radiology:* November 2016



DIAGNOSES TO NOT MISS

Raised intracranial pressure

- Headache- worse on bending forward/straining/coughing/ in morning
- Vomiting
- Altered level of consciousness
- Whooshing noise in one or both ears
- Visual symptoms
  - Transitory visual obscurations or TVOs momentary grey spots or dots perceived in one or both eyes especially with a change in position
  - Blurred vision- reduced visual acuity, papilloedema, enlarged blind spot
  - Diplopia-Ocular palsy- 6^{th} nerve

URGENT REFERRAL for imaging and assessment

Causes of raised intracranial pressure

Localised mass lesions

- Traumatic haematomas (extradural, subdural, intracerebral)
- Neoplasms (glioma, meningioma, metastasis)
- Abscess
- Focal oedema secondary to trauma, infarction, tumour

Disturbance of CSF circulation

- Obstructive hydrocephalus
- Communicating hydrocephalus

Obstruction to major venous sinuse

- Cerebral venous thrombosis

Diffuse brain oedema or swelling

- Encephalitis, meningitis,
- Diffuse head injury

Idiopathic

Idiopathic intracranial hypertension

Thunderclap headache

Headache that is

- very severe
- has abrupt onset, reaching maximum intensity in less than 1 minute.

A medical emergency that requires urgent evaluation for its underlying cause.

Thunderclap headache- causes

Most Common

- Subarachnoid hemorrhage

Less Common

- Cerebral venous sinus thrombosis
- Cervical artery dissection
- Complicated sinusitis
- Hypertensive crisis
- Intracerebral hemorrhage
- Ischaemic stroke
- Subdural hematoma
- Spontaneous intracranial hypotension

Uncommon Causes

- Brain tumor
- Giant cell arteritis
- Pituitary apoplexy
- Pheochromocytoma
- Third ventricle colloid cyst

CASE HISTORY

25yr M

Sudden onset generalised headache reaching maximal intensity instantly

Nausea, ‘dizziness’, sounds ‘ blunted/dull’

Recurrs everytime he sits/stands, resolves on lying down

Examination: normal

What is the diagnosis?

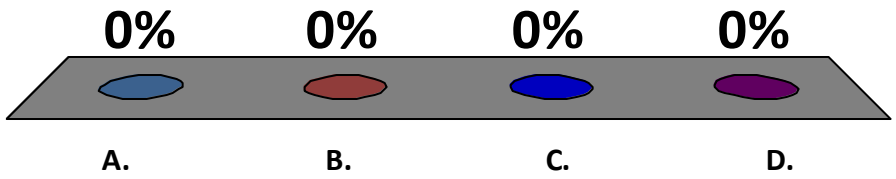
What is the diagnosis?

A. Subarachnoid hemorrhage

B. Intracranial hemorrhage

✓ C. Spontaneous intracranial hypotension

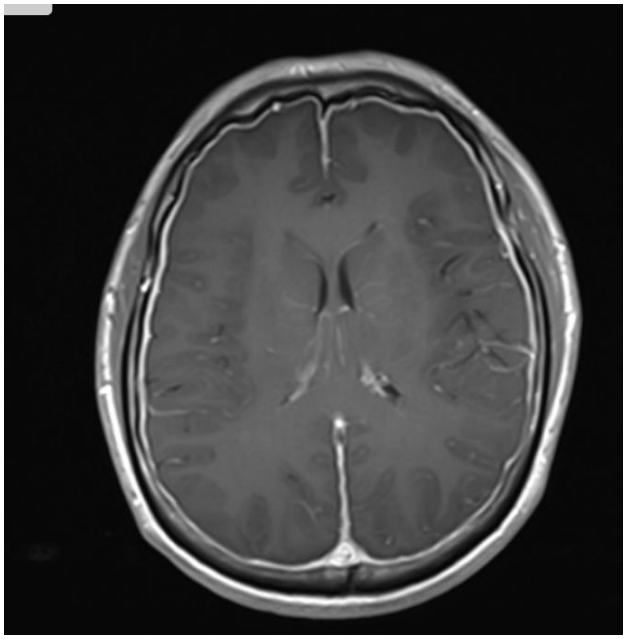
D. Central venous thrombosis

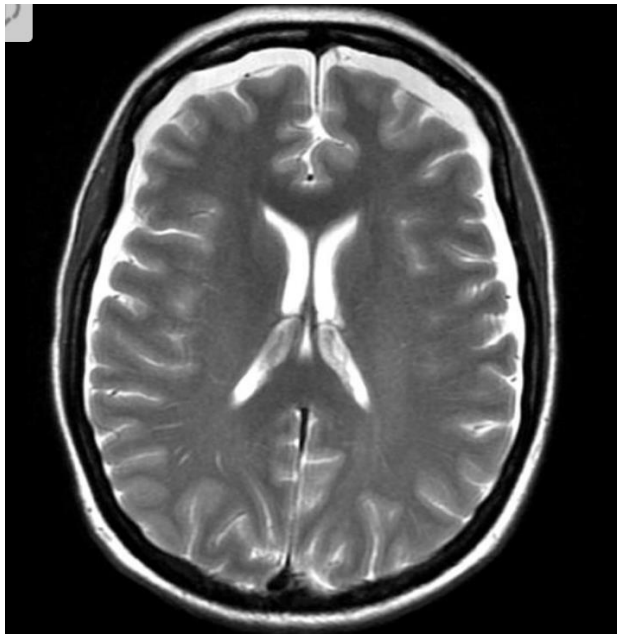


CASE HISTORY

Diagnosis: Spontaneous intracranial hypotension

Significant Postural component





Pachymeningeal enhancement and subdural effusions

CASE HISTORY

67yr M

2/52 History of persistent moderate throbbing right frontotemporal headache

Subjectively feverish, reduced appetite, muscle aches

Examination: normal except tender scalp

ESR 80mm/hr

What is the next management step?

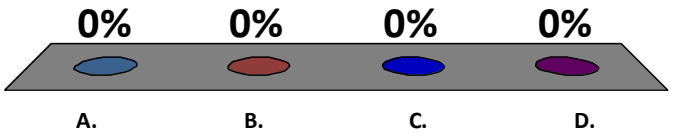
What is the next management step?

A. Refer for imaging

B. Refer for measurement of intraocular pressure

C. Temporal artery biopsy

D. Start on high dose steroids ✓



Giant Cell arteritis

- Age 50 years or older **
- New headache**
- Temporal artery abnormality: temporal artery tenderness to palpation or decreased pulsation, unrelated to arteriosclerosis of cervical arteries
- Elevated ESR of 50 mm/hour or more by the Westergren method
- Abnormal artery biopsy: biopsy specimen with artery showing vasculitis characterized by a predominance of mononuclear cell infiltration or granulomatous inflammation, usually with multinucleated giant cells.

BSR and BHPR Guidelines for the management of giant cell arteritis 2010

Action

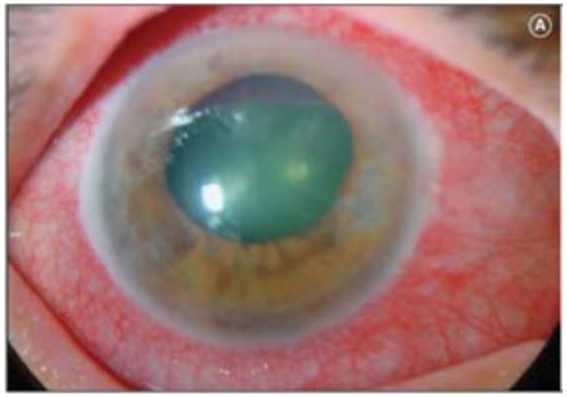
- Immediate initiation of high-dose glucocorticosteroid treatment after clinical suspicion of GCA is raised

Acute narrow angle glaucoma

- Headache
- Nausea, vomiting
- Visual disturbance :Reduced acuity, Halos around lights
- Eye redness

Examination

- Corneal edema
- Engorged conjunctival vessels
- Fixed dilated pupil



Ophthalmological emergency

PRIMARY HEADACHES

	Migraine	Tension Type headache	Cluster headache
Temporal pattern	**Episodic Migraine** Episodes lasting few hours to few days Variable frequency Free of symptoms beteen attacks **Chronic Migraine** 15 or more days /month	**Episodic TTH** Few hours to few days **Chronic TTH** 15 or more days/month	**Episodic CH** Short lasting attacks 15-180minutes Recurring frequently (more than one daily) Bouts 6-12 weeks once a year or two years then remit **Chronic CH** No remission between episodes
Characteristics	Often unilateral Throbbing/pulsing	Can be unilateral but more often generalized Pressure/tightness	Strictly unilateral, around eye
Intensity	Moderate to severe	Mild to moderate	Very severe
Associated symptoms	Nausea and or vomiting Photo/phonophobia	None (mild nausea, photo/phonophobia)	Strictly ipsilateral autonomic features - Red/watery eye - Runny blocked nostril - ptosis
Reactive behavior	Avoidance of physical activity(bed rest) Preference for dark/quiet	None specific	Agitation/restlessness

Tension headache

Diagnostic criteria:

- At least 10 episodes of headache occurring on <1 day per month on average (<12 days per year) and fulfilling criteria below
- Lasting from 30 minutes to 7 days
- At least two of the following four characteristics:

    1. bilateral location
    2. pressing or tightening (non-pulsating) quality
    3. mild or moderate intensity
    4. not aggravated by routine physical activity such as walking or climbing stairs Both of the following:

- no nausea or vomiting
- no more than one of photophobia or phonophobia
- Not better accounted for by another ICHD-3 diagnosis.

The International Classification of Headache Disorders, 3rd edition (beta version) Headache Classification Committee of the International Headache Society (IHS) Cephalalgia 33(9):629-808

Chronic Tension Headache

Diagnostic criteria:

- Headache occurring on >15 days per month on average for >3 months (>180 days per year), fulfilling criteria below
- Lasting hours to days, or unremitting
- At least two of the following four characteristics:
    1. bilateral location
    2. pressing or tightening (non-pulsating) quality
    3. mild or moderate intensity
    4. not aggravated by routine physical activity such as walking or climbing stairs
- Both of the following:

1. no more than one of photophobia, phonophobia or mild nausea
2. neither moderate or severe nausea nor vomiting
- Not better accounted for by another ICHD-3 diagnosis

The International Classification of Headache Disorders, 3rd edition (beta version) Headache Classification Committee of the International Headache Society (IHS) Cephalalgia 33(9) 629–808

Tension headache

Sleep hygiene

Stress management/ relaxation techniques

Address mood/anxiety

Acupuncture

Exclude

Medication overuse

Cervicogenic headache may benefit from physiotherapy

Obstructive Sleep Apnoea

Migraine without Aura

A. At least five attacks[1] fulfilling criteria B–D
B. Headache attacks lasting 4-72 hours (untreated or unsuccessfully treated)[2,3]
C. Headache has at least two of the following four characteristics:
   1. unilateral location
   2. pulsating quality
   3. moderate or severe pain intensity
   4. aggravation by or causing avoidance of routine physical activity (e.g. walking or climbing stairs)
D. During headache at least one of the following:
   1. nausea and/or vomiting
   2. photophobia and phonophobia
E. Not better accounted for by another ICHD-3 diagnosis.

Migraine with Aura

A. At least two attacks fulfilling criteria B and C
B. One or more of the following fully reversible aura symptoms:
   1. visual
   2. sensory
   3. speech and/or language
   4. motor
   5. brainstem
   6. retinal
C. At least two of the following four characteristics:
   1. at least one aura symptom spreads gradually over $\geq$5 minutes, and/or two or more symptoms occur in succession
   2. each individual aura symptom lasts 5-60 minutes[1]
   3. at least one aura symptom is unilateral[2]
   4. the aura is accompanied, or followed within 60 minutes, by headache
D. Not better accounted for by another ICHD-3 diagnosis, and transient ischaemic attack has been excluded.

The International Classification of Headache Disorders, 3rd edition (beta version) Headache Classification Committee of the International Headache Society (IHS) Cephalalgia 33(9) 629–808

Chronic Migraine

A. Headache (tension-type-like and/or migraine-like) on ≥15 days per month for >3 months[2] and fulfilling criteria B and C
B. Occurring in a patient who has had at least five attacks fulfilling criteria B-D for 1.1 *Migraine without aura* and/or criteria B and C for 1.2 *Migraine with aura*
C. On ≥8 days per month for >3 months, fulfilling any of the following[3]:
   1. criteria C and D for 1.1 *Migraine without aura*
   2. criteria B and C for 1.2 *Migraine with aura*
   3. believed by the patient to be migraine at onset and relieved by a triptan or ergot derivative
D. Not better accounted for by another ICHD-3 diagnosis.

The International Classification of Headache Disorders, 3rd edition (beta version) Headache Classification Committee of the International Headache Society (IHS) Cephalalgia 33(9) 629–808

Management

Lifestyle

- Good sleep hygiene
- Regular meals
- Hydration
- Limit/reduce caffeine
- Trigger avoidance eg alcohol

Acute treatment

Prophylaxis

Very important to explain the difference to patients

Acute treatment

- Dependant on severity of headache
- Speed of onset
- Associated symptoms eg nausea
- Patients co-morbidities eg asthma, vascular disease
- Patient preference

Lots of options!

Acute treatment

- **Paracetamol**
- **NSAID**

Aspirin up to 900mg

Ibuprufen up to 800mg

Diclofenac

- **Triptan**

Sumatriptan

Zolmitriptan

Rizatriptan

Frovitriptan

Eletriptan

Almotriptan

- **Other**

Prochloperazine-(dopamine receptor antagonists)

Opioids-last resort

+ Antiemetic

Taken early in the course of the headache

Approaches to acute treatment

Stratified Approach

- Medication chosen for a given patient based on attack severity and resulting disability

  Eg NSAID for mild/moderate

  Triptan for moderate to severe headache

Step Care Across attacks Approach

- Start with less expensive/ greater safety/less side effects first – if ineffective step up
- Risk of OTC/MOH

Step Care within attack approach

- Take simple analgesia at onset then 'step up' later in the course of the attack if initial medication fails
- Risk of second more effctive drug not working as well

Triptans- Important consideration

- Administration route: sc, oral- tablet / wafer, nasal
- Speed of action
- Duration of action
- Other factors eg Access to water, Nausea , Patient preference

Take acutely not regularly , early in course of headache- not aura

Repeat if effective but get a recurrence

Do not exceed 8-10 doses/ month- risk of medication overuse

If one formulation not effective- trial another triptan

Contraindications: Vascular disease

Common issues with acute treatment

Trialled oral triptan – not effective

- Choose a different triptan
- Choose a different route – s/c >nasal>oral
- Choose another rescue medication eg NSAID

Triptan effective but only for 2-3 hours then headache recurs and has to repeat a dose

- Choose a triptan with a longer half life eg almotriptan/ eletriptan
- Naratriptan and Frovitriptan have a slower onset of action

Triptan partially effective

- Add an NSAID

CASE HISTORY

57yr M

Ocassional migraine- twice a year

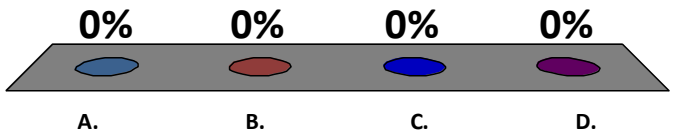
Left sided throbbing headache, photo and phonophobia and nausea

PMH: coronary artery disease, recent erosive gastritis

What's the next management step?

What is the next management step?

A. Naproxen
B. Sumatriptan
C. Opioid analgesic
✓ D. Prochlorperazine



Migraine Prophylaxis

Aims

- Reduce frequency
- Reduce duration
- Reduce severity
- Enhance response of acute treatment
- Improve ability to function
- Reduce disability

Also reduce health costs

- Reduce consultations/ A&E attendances (up to 51%)
- Reduce medication use
- Reduce imaging (81% CT, 75% MRI)

Migraine Prophylaxis

Consider prophylaxis

- Recurring migraine attacks interfering with quality of life
- Frequent headaches (4+migraine days/month or 8+ headache days/month)- risk of chronic migraine
- Failure of/contraindication to/ overuse of acute medication
- Patient preference
- Certain migraine subtypes: hemiplegic migraine, migraine with brainstem aura, frequent/prolonged aura

Successful if 50 % reduction in migraine attack

Migraine Prophylaxis

Choice of agent based on

- Efficacy
- Patient preference
- Co-existent/comorbid conditions
- Adverse event /side effect profile- take advantage of this!

Migraine prophylaxis

- Beta-blocker
- Antidepressants
- Anti-epileptics

Headache :Continuum 2015
American Academy of Neurology

TABLE 2-2 Classification of Migraine Preventive Therapies (Available in the United States)[a]

Level A: Medications With Established Efficacy (≥2 Class I Trials)	Level B: Medications Are Probably Effective (1 Class I or 2 Class II Studies)	Level C: Medications Are Possibly Effective (1 Class II Study)	Level U: Inadequate or Conflicting Data to Support or Refute Medication Use	Other: Medications That Are Established as Possibly or Probably Ineffective
Antiepileptic drugs	Antidepressants/ SSRI/SNRI/TCA	ACE inhibitors	Carbonic anhydrase inhibitor	Established as not effective
Divalproex sodium	Amitriptyline	Lisinopril	Acetazolamide	Antiepileptic drugs
Sodium valproate	Venlafaxine	Angiotensin receptor blockers	Antithrombotics	Lamotrigine
Topiramate	Beta-blockers	Candesartan	Acenocoumarol	Probably not effective
Beta-blockers	Atenolol[b]	α-Agonists	Coumadin	Clomipramine[b]
Metoprolol	Nadolol[b]	Clonidine[b]	Picotamide	Possibly not effective
Propranolol	Triptans (MRM[c])	Guanfacine[b]	Antidepressants/ SSRI/SNRI	Acebutolol[b]
Timolol[b]	Naratriptan[c]	Antiepileptic Drugs	Fluvoxamine[b]	Clonazepam[b]
Triptans (MRM[c])	Zolmitriptan[c]	Carbamazepine[b]	Fluoxetine	Nabumetone[b]
Frovatriptan[c]		Beta-blockers	Antiepileptic drugs	Oxcarbazepine
		Nebivolol	Gabapentin	Telmisartan
		Pindolol[b]	TCAs	
		Antihistamines	Protriptyline[b]	
		Cyproheptadine	Beta-blockers	
			Bisoprolol[b]	
			Ca++ blockers	
			Nicardipine[b]	
			Nifedipine[b]	
			Nimodipine	
			Verapamil	
			Direct vascular smooth muscle relaxants	
			Cyclandelate	

TABLE 2-5 Miscellaneous Medications in the Preventive Treatment of Migraine

Agent	Daily Dose	Comments
Angiotensin-converting enzyme and angiotensin receptor antagonists		
Lisinopril	10–40 mg	Positive small controlled trial
Candesartan	16–32 mg	Positive small controlled trial
Feverfew	50–300 mg	Controversial evidence
Riboflavin	400 mg	Positive small controlled trial
Coenzyme Q10	300 mg	Two positive controlled trials
Magnesium citrate	400–600 mg	Controversial evidence

Headache :Continuum 2015 American Academy of Neurology

Migraine prophylaxis- key to success!

- Start with a small dose and titrate up slowly
- Explain NOT a painkiller and need to be on maximal dose tolerated for 6-8 weeks before efficacy can be assessed
- Can take up to 6 months to get full effect
- Headache diary

When to switch to alternative?

- Not tolerated/significant side effects/allergy
- Not even a partial response on maximal tolerated dose for 8 weeks

When to stop prophylaxis?

If effective and headache well controlled for 6months – consider titrating down gradually aiming to stop.

If headache recurs- restart/ go back up to dose when last well

If prophylaxis not effective

- Review diagnosis
- Check compliance
- **Consider additional causes for headache eg medication overuse**

Refer

- BOTOX
- GON injections

(Devices/ Monoclonal antibodies- Calcitonin Gene-related peptide)

TABLE 12-6 Summary of Randomized Double-blind Controlled Studies of the Efficacy of Botulinum Toxin Type A in the Treatment of Headache

Headache Type	Study Outcome
Migraine	
Silberstein et al, 2000[30]	Decreased migraine frequency and severity and acute medication use with botulinum toxin type A (BoNTA) 25 units (U) but not with BoNTA 75 U
Brin et al, 2000[31]	Decreased migraine pain compared to placebo with simultaneous frontal and temporal BoNTA injections
Evers et al, 2004[32]	No difference from placebo in decreased frequency of migraine
	Greater decrease in migraine-associated symptoms with BoNTA 16 U
Saper et al, 2007[33]	Decreased frequency and severity of migraine in BoNTA and placebo groups with no between-group differences
Elkind et al, 2006[34]	Comparable decreases in migraine frequency in both BoNTA and placebo groups with no between-group differences
Chronic migraine	
Mathew et al, 2005[35]	No difference from placebo on primary efficacy end point; change in headache-free days from baseline at day 180
	A significantly higher percentage of BoNTA patients had a ≥50% decrease in headache days/month at day 180 compared to placebo
Dodick et al, 2005[36]	Greater decrease in headache frequency after two and three injections compared to placebo
Silberstein et al, 2005[37]	No difference from placebo on primary efficacy end point; change in headache frequency from baseline at day 180
	Greater decrease in headache frequency for BoNTA 225 U and 150 U than placebo
Dodick et al, 2010[23–25]	Two large placebo-controlled, double-blind trials
	BoNTA both safe and effective
Chronic tension-type headache	
Silberstein et al, 2006[38]	No difference from placebo on primary efficacy end point; mean change from baseline in chronic tension-type headache days
	Greater percentage of BoNTA patients than placebo with ≥50% reduction in headache frequency at 90 and 120 days for several doses of BoNTA

Medication overuse headache

Diagnostic criteria:

- Headache occurring on
  - 10 or more (combination analgesics, opioids, ergotamines or triptans) **or**
  - 15 or more days per month(paracetamol, NSAID in a patient with a pre-existing headache disorder
- Regular overuse for >3 months of one or more drugs that can be taken for acute and/or sympto- matic treatment of headache
- Not better accounted for by another ICHD-3 diagnosis.

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Medication overuse management

Need pharmacological and behavioural intervention

- Stop analgesics
- Alternative acute medication- use no more than twice/week
- Consider bridge therapy
- Consider initiating preventative medication to facilitate withdrawal
- CBT/relaxation techniques

Warn worsen before starting to improve

Can take at least 8 weeks off analgesics before starting to see an improvement

Medication overuse management

Educational intervention **42-92%** with chronic migraine and MOH revert to episodic headache within 18months

41% of detoxified patients relapse within first year after withdrawal.

CASE HISTORY

35 year women
History of migraine with aura- left sided severe throbbing with photo/phonophobia

Increase frequency of headache over last 12 months

At least 4 headaches/wk = 16+ days /month

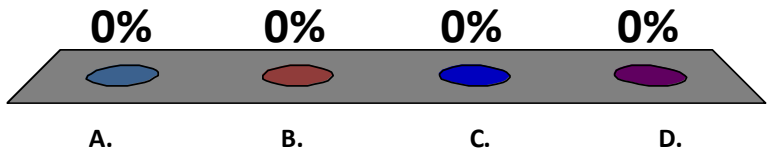
Using combination
- paracetamol, caffiene, codeine at least 3x/wk
- Sumatriptan 2x /wk

Examination is normal

What is the diagnosis?

What is the diagnosis?

A. Chronic Migraine
B. Medication overuse Headache
C. Space occupying lesion
D. A and B



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Increase frequency of headache over last 12 months

Diagnoses: Chronic Migraine and Medication Overuse Headache

Sumatriptan very effective- asking to be prescribed more than the 8 doses/ month

What is the next management step ?

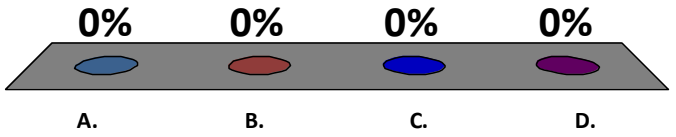
What's the next management step?

A. Increase monthly supply of sumatriptan

B. Change Sumatriptan to Almotriptan

✓ C. Recommend preventative therapy

D. Stop all abortive medication



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24yr M
Recent onset headache : Left sided ,severe , stabbing, rapid onset behind eye
Nightly for past week : Comes on 1 hour after falling asleep
Restless/ pacing
Resolve after 30minutes

Left eye blood shot/ tearing and congestion/runny left nostril

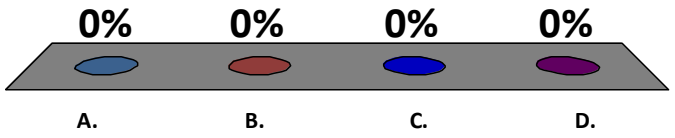
Headache free and well in between episodes
Similar run of headaches 1 year ago- lasted 3 weeks- resolved

Examination: normal

What is the diagnosis ?

What is the diagnosis?

A. Migraine
✓ B. Cluster headache
C. Paroxysmal hemicrania
D. SUNCT(Shortlasting unilateral neuralgiform headache with conjuctival injection and tearing)



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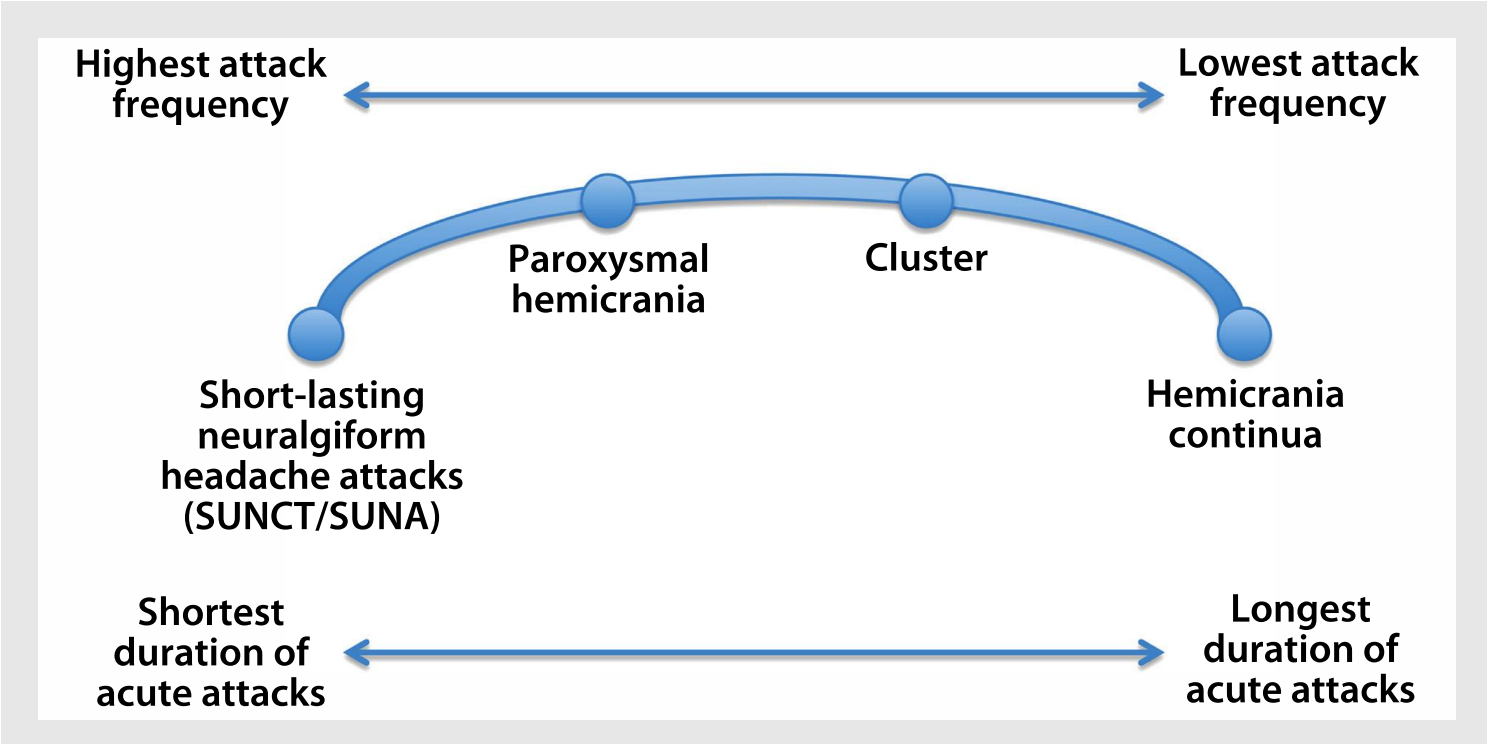
Trigeminal Autonomic Cephalgias

Short-lasting episodes of severe unilateral headaches associated with ipsilateral cranial autonomic symptoms.



Clinical spectrum of trigeminal autonomic cephalgias

Headache :Continuum 2015

American Academy of Neurology

Clinical Features of Trigeminal Autonomic Cephalgias

Feature	Cluster	Paroxysmal Hemicrania	SUNCT/SUNA	Hemicrania Continua
Sex ratio female:male	1:3	1:1 episodic, 2:1 chronic	1:1.5	2:1
Pain quality	Stabbing, boring	Throbbing, boring, stabbing	Burning, stabbing, throbbing	Baseline: steady ache Exacerbations: throbbing, stabbing
Pain severity	Very severe	Very severe	Severe	Baseline: mild to moderate Exacerbations: moderate to severe
Site of maximal pain	Orbit, temple	Orbit, temple	Orbit, temple	Orbit, temple
Attacks per day	1–8	1–40	1–100	Daily in 50%
Attack duration	15–180 minutes	2–30 minutes	1–10 minutes	30 minutes to 3 days
Autonomic features	Present	Present	Present	Present during exacerbations
Restlessness	90%	80%	65%	Infrequent
Usual temporal profile	Episodic	Chronic	Chronic	Unremitting
Circadian periodicity	Yes	No	No	No
Nocturnal attack	Yes	No	No	No
Triggers				
Alcohol	Yes	Yes	No	No
Nitroglycerin	Yes	Yes	No	No
Cutaneous	No	No	Yes	No
Cervical root pressure	No	Yes	No	No
Neck movement	No	Yes	Yes	No
Treatment response				
Oxygen	Yes	No	No	No
Sumatriptan	Yes	Partial	No	Partial
Indomethacin	Occasional	Yes	No	Yes

SUNCT = short-lasting unilateral neuralgiform headache attacks with conjunctival injection and tearing; SUNA = short-lasting unilateral neuralgiform headache attacks with cranial autonomic features.

Headache: Continuum 2015
American Academy of Neurology

Cluster headache

- Uncommon- 0.1% population, F:M 1:3
- Family History 5-20% of patients
- Majority experience the episodic form, in which cluster cycles (the period of time during which attacks occur) last from weeks to months, separated by pain-free remission periods lasting from several months to years

Correct initial diagnosis of cluster headache was made in **only 21%** of patients

Time delay to reach the correct diagnosis was more than **5 years in 42% of patients.**

Cluster Headache- diagnostic criteria

A. At least five attacks fulfilling criteria B–D
B. Severe or very severe unilateral orbital, supraorbital and/or temporal pain lasting 15–180 minutes (when untreated)[1]
C. Either or both of the following:
   1. at least one of the following symptoms or signs, ipsilateral to the headache:
      a) conjunctival injection and/or lacrimation
      b) nasal congestion and/or rhinorrhoea
      c) eyelid oedema
      d) forehead and facial sweating
      e) forehead and facial flushing
      f) sensation of fullness in the ear
      g) miosis and/or ptosis
   2. a sense of restlessness or agitation
D. Attacks have a frequency between one every other day and eight per day for more than half of the time when the disorder is active

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Cluster headache

- **Episodic Cluster Headache**

  Description: Cluster headache attacks occurring in periods lasting from 7 days to 1 year, separated by pain-free periods lasting at least 1 month.

  A. Attacks fulfilling criteria for cluster headache and occurring in bouts (cluster periods)

  B. At least two cluster periods lasting from 7 days to 1 year (when untreated) and separated by pain-free remission periods of ≥1 month

- **Chronic Cluster Headache**

  Description: Cluster headache attacks occurring for more than 1 year without remission or with remission periods lasting less than 1 month.

  A. Attacks fulfilling criteria for cluster headache and criterion B below

  B. Occurring without a remission period, or with remissions lasting <1 month, for at least 1 year

Investigation

All patients with a trigeminal autonomic cephalalgia should be considered for an MRI brain with special attention to the pituitary gland as part of their workup.

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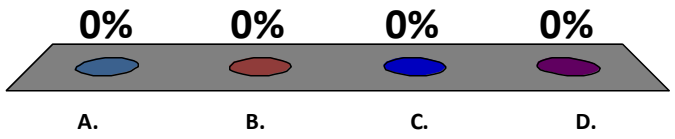
Resolve after 30minutes
Left eye blood shot/ tearing and congestion/runny left nostril
Headache free and well in between episodes
Similar run of headaches 1 year ago- lasted 3 weeks- resolved
Examination: normal

Diagnosis: Cluster headache

What medication is first line for daily preventative

What drug 1st line for daily preventative treatment?

A. Sumatriptan s/c
B. Propranolol
✓ C. Verapamil
D. Prednislonone



CASE HISTORY

24yr M

Diagnosis: Cluster headache

What medication is first line for daily preventative therapy?

A. Sumatriptan s/c

B. Propranolol

C. Verapamil

D. Prednislonone

Cluster headache - Management

Acute

- Oxygen therapy- 15 L via nonrebreath bag
- Triptan sc or nasal NOT oral

Bridging

- Short course of steroids
- Great Occipital Nerve injection

Prophylaxis

- Verapamil up to 960mg /day – titrate gradually with ECG monitoring
- Lithium
- Topiramate

Primary headaches- who to refer

- If develop any red flags
- Migraine not responded to prophylaxis- trialled three agents
- First presentation of Trigeminal Autonomic cephalgia

Referral letter- please include

- Agents trialled
- Doses reached
- Length of treatment with each agent
- Reason for stopping eg not effective/ not tolerated

Key Messages

- Different headache types can co-exists- need to address all to get an improvement in patient symptoms
- Recognise Red Flags and refer urgently
- Majority of headaches not due to sinister pathology but still have significant impact on patient
- Give patient a positive diagnosis and reassurance
- Take time to explain diagnosis and aims of treatment/ what to expect
- Headache diaries play in important role in diagnosis and monitoring
- Choose treatment options based on patient
- Be patient! Lots of treatment options available but may take time to find the right medication/ for it to

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