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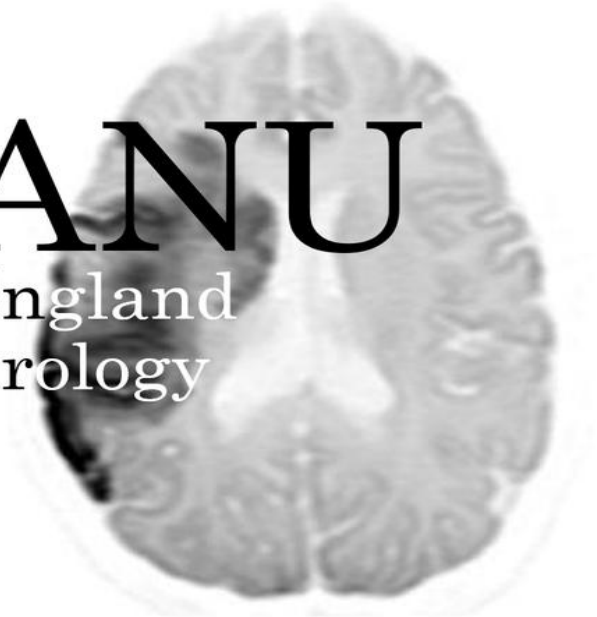

Acute Headaches

Dr Keira Markey
NIHR Academic
Clinical Lecturer

Dr Aidan Whitehead
Neurology Specialist
Registrar

MANCHESTER 1824
The University of Manchester

Manchester Centre for Clinical Neurosciences

Salford Royal NHS
NHS Foundation Trust

Disclosures

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Keira

- None

Aidan

- None

Areas to be covered

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- Common primary headaches presenting to the acute services
- Secondary headaches and pitfalls/learning points
- Management of acute headaches
- When to refer on.

Headache Overview

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- **Primary**
  - Migraine
  - TACs
  - Tension
  - Others
- **Secondary**
  - SAH and ICH
  - Meningitis and encephalitis
  - IC hypo and hypertension
  - CVST
  - CAD/VAD
  - Tumours

Headache History

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Timing is important!

Onset, frequency, duration

Site

Side-Locked?

Neck

Character

Stabbing, pressure, throbbing

Relieving

Posture

Simple painkillers

Dark room

Exacerbates

Postural

Valsalva

Migraine symptoms

N&V photo/phono/ osmophobia

Mechanophobia

Other features

Aura

Visual loss

Autonomic

Medications

Acute Rx

No days simple Analgesia

Preventatives tried

Headache Examination

ABCDE

- level of alertness/agitation/confusion?

Fundoscopy!

Eye movements and vision

Focal neurology

Red Flags

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- Age >50 yrs
- Fever, neck stiffness, rash
- Visual loss (complete? Transient?)
- Atypical aura (e.g. >1 hour, motor, brainstem)
- Papilloedema
- Reduced consciousness/LOC
- Seizures
- Immunosuppressed – cancer/HIV/immunosuppressants
- Postural symptoms/Valsalva – initiates!
- Thunderclap – max intensity by 1 min
- New daily persistent headache
- Change in character; refractory

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Case 1

- 46yr old
- Referred with sudden onset headache ?SAH

Further History

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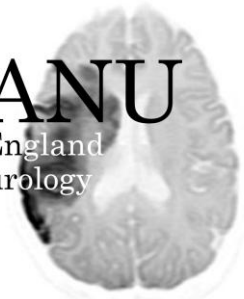

- Started 12 hours previously
- Top of head, evolved to whole head
- Reports it came on suddenly, woke her from sleep at 7am but time to maximal severity was 40min
- Nauseous and 1 episode of vomiting
- R eye was red, lacrimating and her eyelid felt droopy – now improved
- Occasional episodes of blurred vision like a untuned TV lasted some minutes and improve
- Prefers to remain still and with dimmed lights
- Gets occasional headaches in the past, never this severe.

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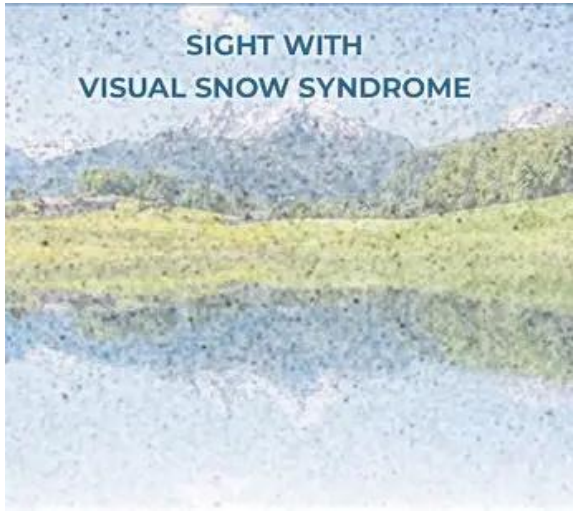
Clinical Exam

- Normal Fundoscopy
- Normal Visual Acuity
- Subtle ptosis
- Normal pupil
- No meningism

Key Points

- The history is strongly suggestive of Migraine
- Unilateral autonomic features can be seen in Migraine
- Population based study in Germany: from >800 migraine patients 26.9% had U/L autonomic features.
- Visual snow



Migraine

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- Commonest headache disorder
- 3:1 females; Peak onset 35-45yrs

Headaches last at least 1-72hrs*
Two of the following features:
- Unilateral or bilateral
- Throbbing or pulsating quality
- Moderate to severe
- Aggravated by physical activity
At least one of the following:
- Nausea and/or vomiting
- Photophobia or phonophobia

What is a migraine attack?

the migraine trust

Migraine attacks come in various shapes and sizes, but generally they have four or five stages:

PREMONITORY STAGE

During this stage people can feel a variety of physical and mental changes such as tiredness, craving certain type of foods, mood changes (from irritability, depression to euphoria), feeling thirsty, neck stiffness and frequent yawning. These feelings can last from 1 to 24 hours.

AURA

Around a 1/3 of people with migraine go through this stage (although not necessarily every time). Aura occurs due to a spontaneous, slow-moving wave that passes over the surface of the brain temporarily affecting the functioning of the parts it travels over. The associated symptoms depend on which parts of the brain are affected.

THE HEADACHE OR MAIN ATTACK STAGE

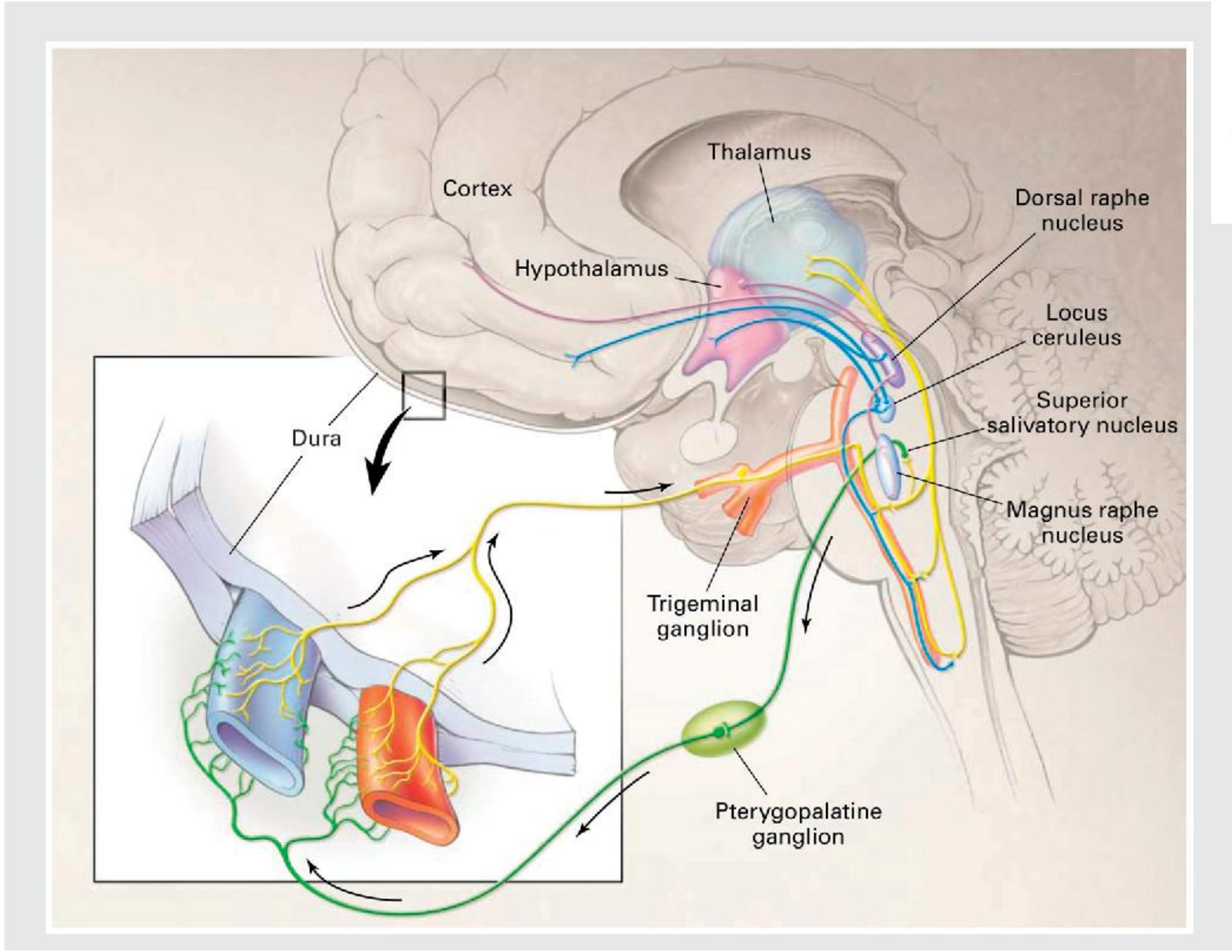
This stage involves head pain, which can be extremely severe. The headache is typically throbbing, and made worse by movement, light or sound. The headache is usually on one side of the head but can be on both sides, or all over the head. Sickness and vomiting can happen at this stage. This stage can last from 4 hours to up to 3 days.

RESOLUTION

Most attacks slowly fade away, but some stop suddenly. Sleep seems to help many people. Even an hour or two of sleep can be enough to end an attack.

RECOVERY OR POSTDROME STAGE

This is the final stage of an attack which can best be described as a 'hangover' type feeling. This feeling can take days to disappear. Symptoms can often mirror symptoms from the premonitory stage. For example, if a person lost their appetite at the beginning of the attack, they might be very hungry now.



Goadsby, NEJM, 2002

Acute Migraine Management

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BASH headache guidelines: https://headache.org.uk/index.php/for-doctors

- **Acute – Triple treatment**
  - Paracetamol + High dose NSAID*/Triptan + Metoclopramide (or other antiemetic)

  *800mg ibuprofen/900mg aspirin/50mg diclofenac

  One off dose
  - Avoid triptans in CV disease/MI
  - Rimegepant 75mg if triptan CI or 2 already tried! Acute and for episodic migraine

- Regular headaches?
  - HEADACHE DIARY
  - Lifestyle modification: caffeine/smoking/**analgesic use***
  - Medication overuse headache

Medication Overuse Headache

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- Very common
- Simple analgesics >15 days/month
- Triptans >10 days/month
- **Avoid codeine and other opiates**
- Needs to withdraw. Detox for 1 month.
- Worsens before improving.
- Headache diary!

Status Migrainosis

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- Headache lasting more than 72hrs
- Different from chronic migraine (>15 days of the month).
- Resistant to usual meds
- Look for triggers. Consider secondary causes e.g. infection

Management

1. IV fluids and IV antiemetics
2. GON blocks
3. ?Dexamethasone*/500mg valproate
4. DHE 0.5mg IV tds + IV antiemetic 2-5 days (IP Neurology). ECG before. Vasocontrictive

- *Huang Y, Eur J Neurol. 2013.

Chronic Migraine Management

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Prophylactic Treatment			
Drug	**Type**	**Dosing**	**Side effects**
Propranolol	Beta blocker	Start at 20mg BD, increase by 40-80mg each time up to max of 320mg a day.	Bradycardia, GI Sx
Candesartan	ARB/Antihypertensive	Start 4mg a day, can increase up to 32mg OD	Low BP
Topiramate	Antiepileptic	Start at 25mg OD, increase by 25mg in divided doses, every 1-2 weeks up to 100mg BD.	Parasthesiae Pins and needles Cognitive Dizziness
Amitriptyline/ Nortripylline	TCA/Antihypertensive	Start at 10-20mg ON, increase slowly up to max 100mg ON.	Tiredness QT prolongation Anticholinergic
Treatment dose for at least 3 months or intolerable side effects before changing.			

Tertiary Migraine Management: Old and New

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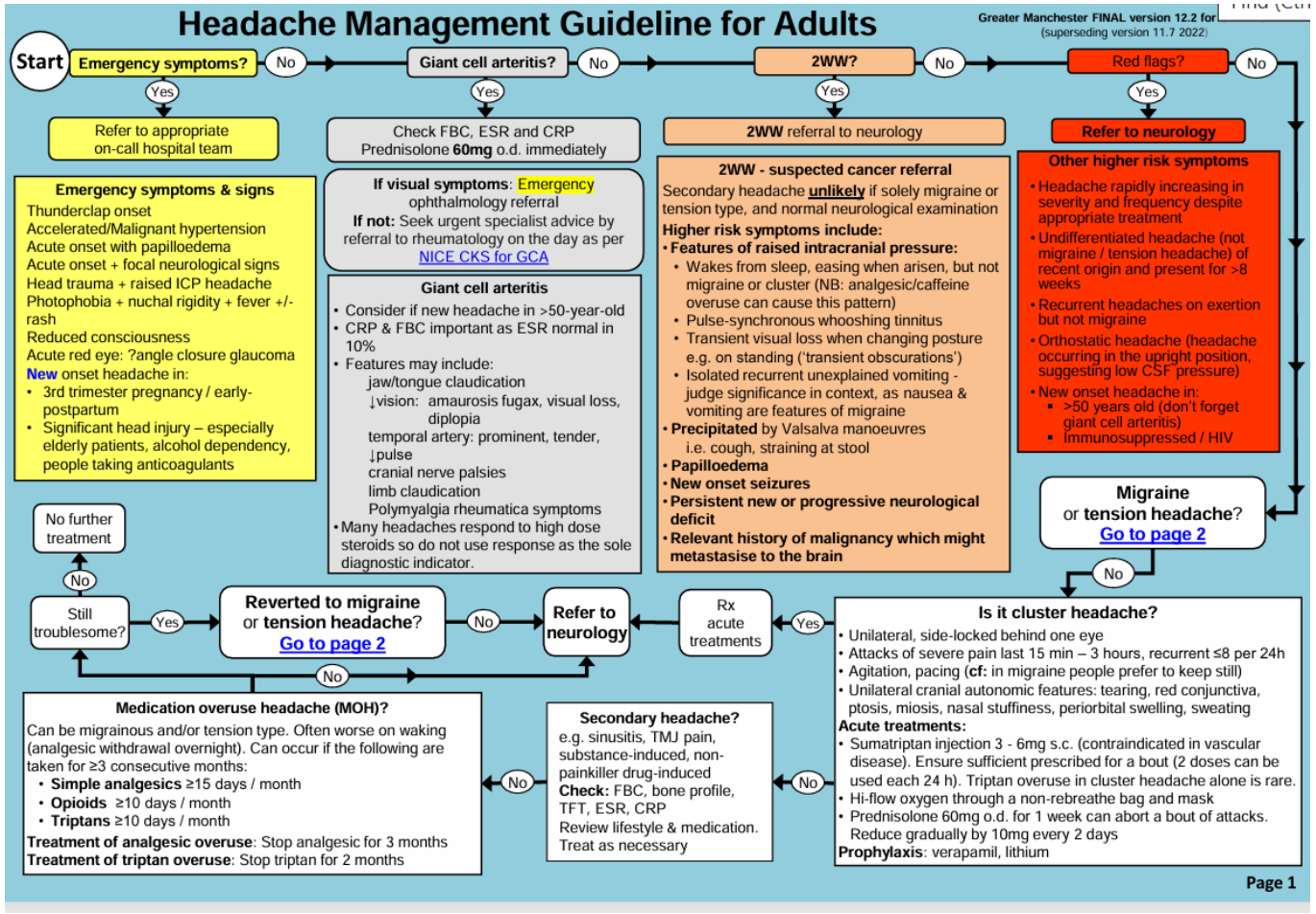
- Gepants (cGRP RA; oral)
  - Atogepant 60mg (Episodic & Chronic)
  - Rimegepant 75mg (Acute & Episodic)
- Botox – Preempt study
- Neurostimulation:
  - VNS (gammacore),
  - Supra-orbital (Cefaly)
  - TMS

cGRP monoclonal antibodies			
Fremanuzemab (Ajovy)	**Galcanezumab (Emgality)**	**Erenumab (Aimovig)**	**Eptinezumab (Vyepti)**
CGRP ligand	CGRP ligand	CGRP receptor	CGRP ligand
Monthly/sc	Monthly/sc	4 weekly/sc	3 month/IV
Hypersensitivity/ No major cardiac	Hypersensitivity/ No major cardiac	Constipation/ Hypersensitivity/No major cardiac	Serious hypersensitivity/No major cardiac, neuro or psych

Greater Manchester Headache Pathway



https://gmmmg.nhs.uk/wp-content/uploads/2024/12/Headache-Pathway-and-notes-V12.2-FINAL.pdf

- Cluster headaches: 'Like someone is grabbing your face' - BBC News - YouTube

Cluster Headache

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A. At least 5 attacks

B. Severe unilateral orbital, supraorbital and/or temporal pain usually associated with **agitation.**

C. Headache associated with 1 of the following on the same side:
   1. Conjunctival injection
   2. Lacrimation
   3. Nasal congestion
   4. Rhinorrhoea
   5. Forehead sparing
   6. Miosis
   7. Ptosis
   8. Eyelid oedema

D. 1-8 attacks/day

Trigeminal autonomic cephalgia
3:1 males:female
Side-locked

Cluster Management

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ACUTE

- IM sumatriptan (3/6mg; max 12mg daily), or IN sumatriptan.
- High flow oxygen (15L, non-rebreathe mask); arrange home O2
- GON block (ask your friendly Neurologist ☺)

SUBACUTE

- Short course of steroids 60mg 7 days, withdraw over 1 week.

PROPHYLACTIC (>2 weeks)

- Verapamil 80mg tds, increase by 80mg 1 week. Max 960mg.
- ECG before start and EVERY increase
- Conduction problems

Others Trigeminal Autonomic Cephalgias

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Increasing Frequency

	Hemicrania Continua	Cluster	Paroxysmal Hemicrania	SUNCT/SUNA
F:M	2:1	1:3	3:1	1:8
Character	Pressure-like	Piercing	Piercing	Stabbing
Severity	Moderate	Very high	High	Mod to high
Site	Side-locked; periorbital	Periorbital, frontal, temporal	Orbital, temporal	Orbital, temporal
Duration	Continuous with intense attacks	15-300 mins	1-30 mins	1s-10mins
Frequency	Continuous	1-8 attacks	1-40/day	1-400/day
Associated Symptoms	Conjunctival injection, ptosis, miosis	Ptosis, miosis, U/L nasal discharge, facial sweating	Chemosis, miosis	Conjunctival injection, ptosis, tearing
Acute Management	Indomethacin	O2 / IM sumatriptan	Indomethacin	IM sumatriptan

Case 2

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History

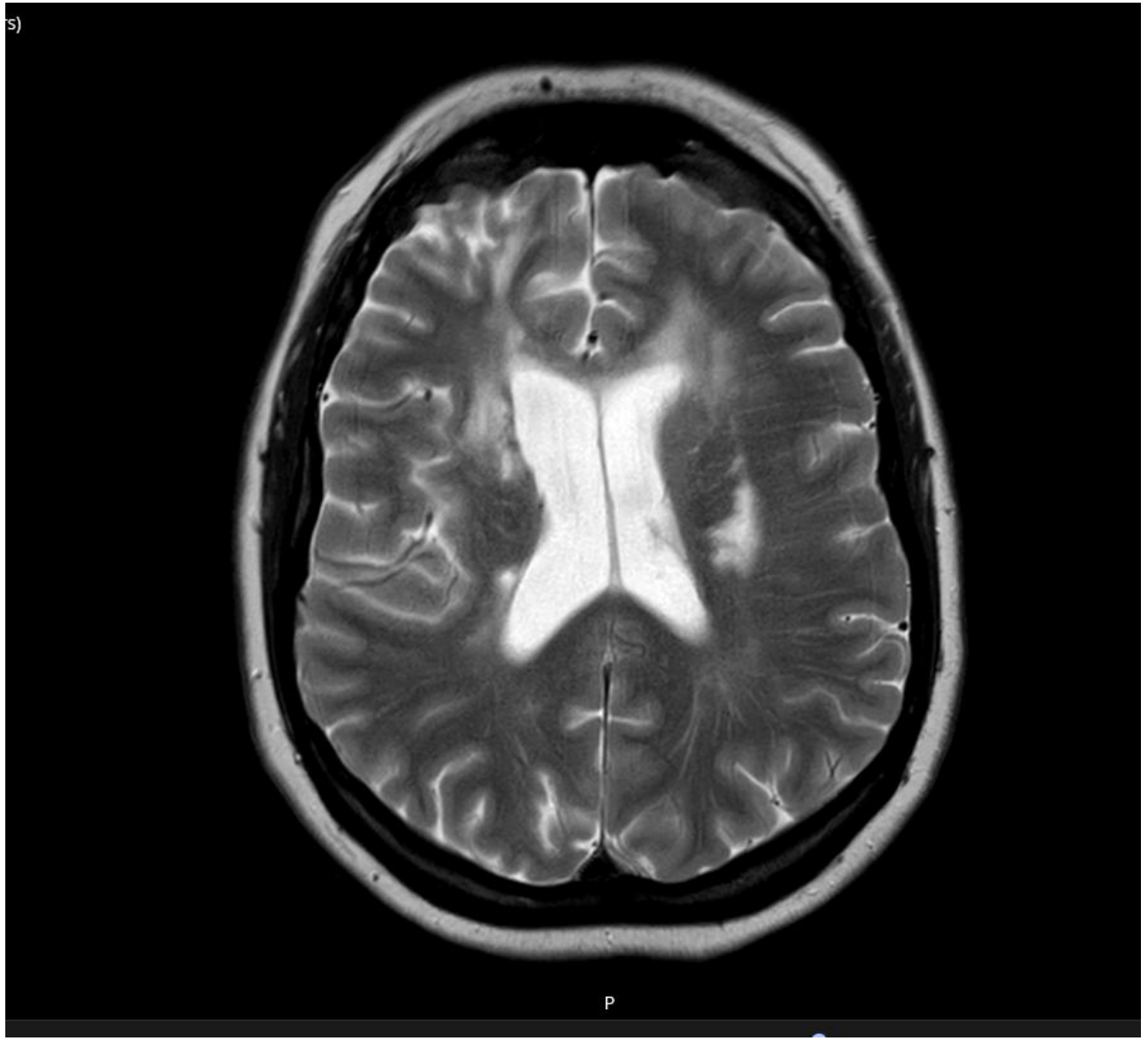
- 39yr
- Obese, diabetic
- Background history of migraine, fibromyalgia
- Admitted with thunderclap headache – R sided, sharp
- New onset and persistent L sided sensory loss, no positive phenomena
- Persistent for 20 hours
- Previously felt nonspecific unwell for number of weeks
- Family concerned about cognition

Examination

- Hemisensory loss to PP
- Grade 4 weakness
- Cortical sensory function intact

Investigations

- CRP 104
- ESR 64
- CSF: Xanthochromia absent CSF protein 1.2g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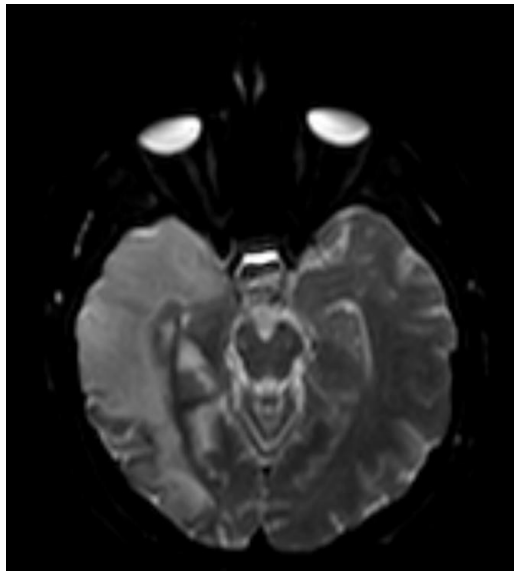
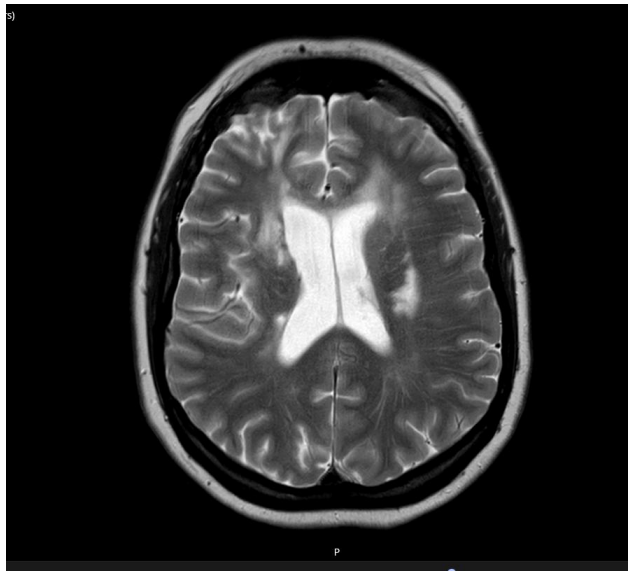
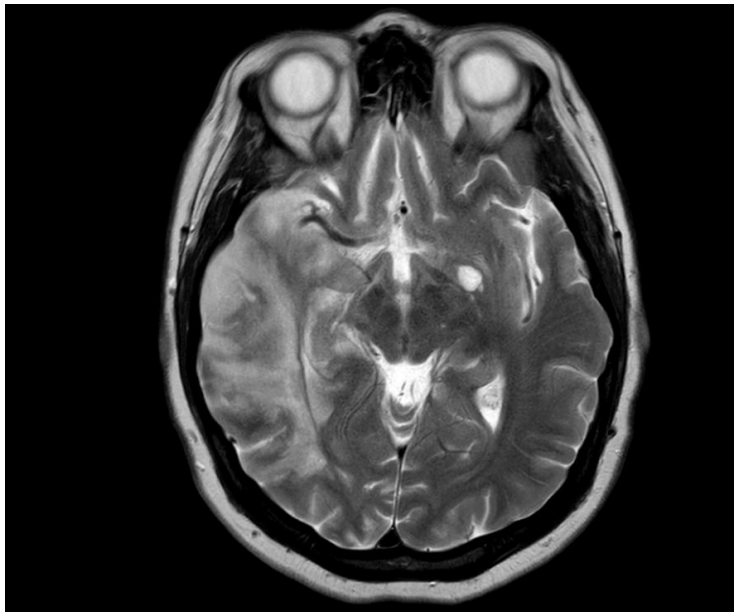
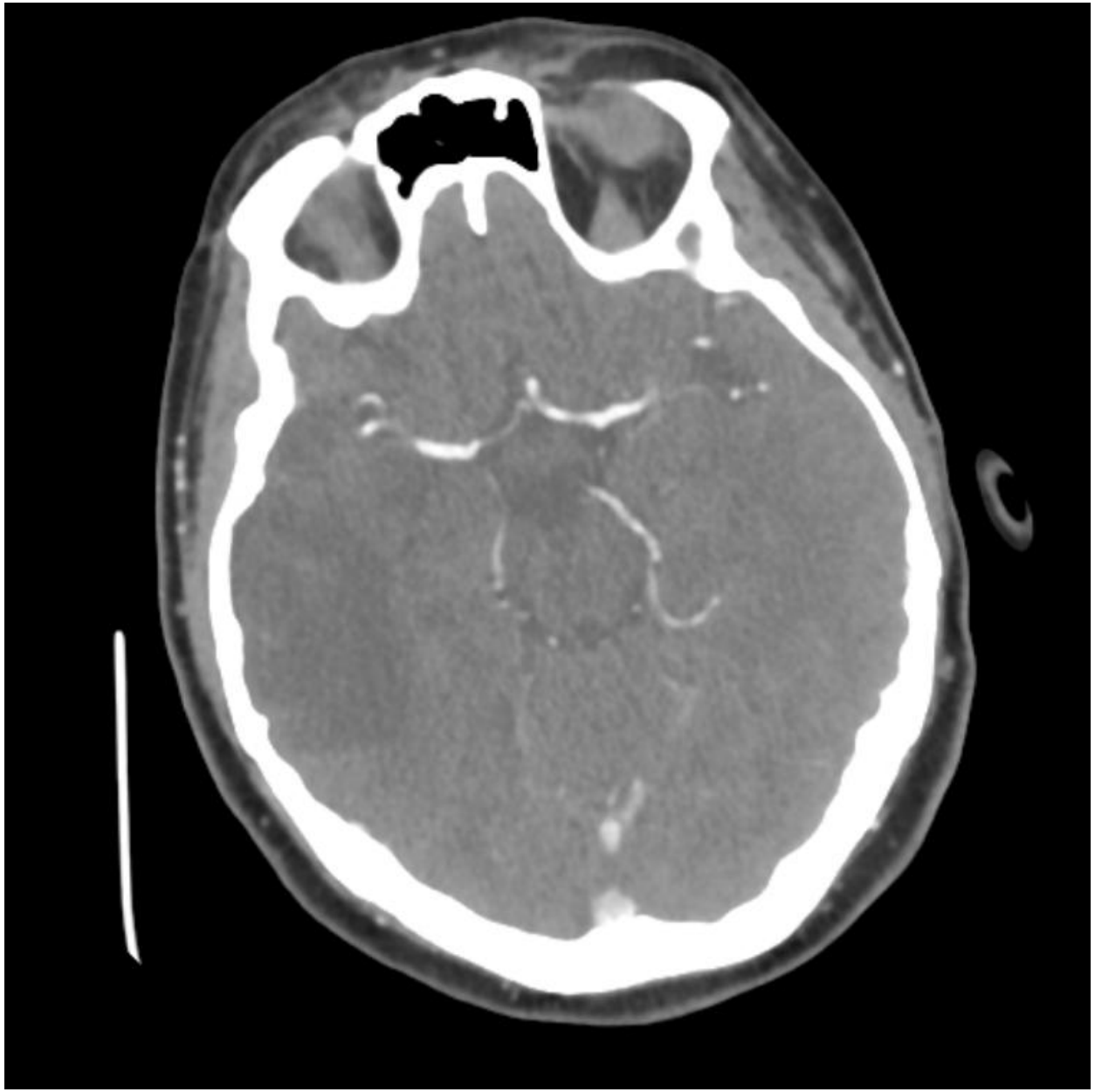
MCA infarct Multi territory infarcts of varying age







Multifocal beading and narrowing of small and medium vessels



Key Points

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Sensory disturbance >1hr and **–ve** *vs* +ve.

Young Stroke

Systemic illness- raised ESR and CRP

Case 3

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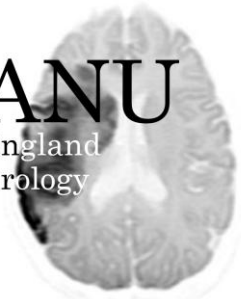
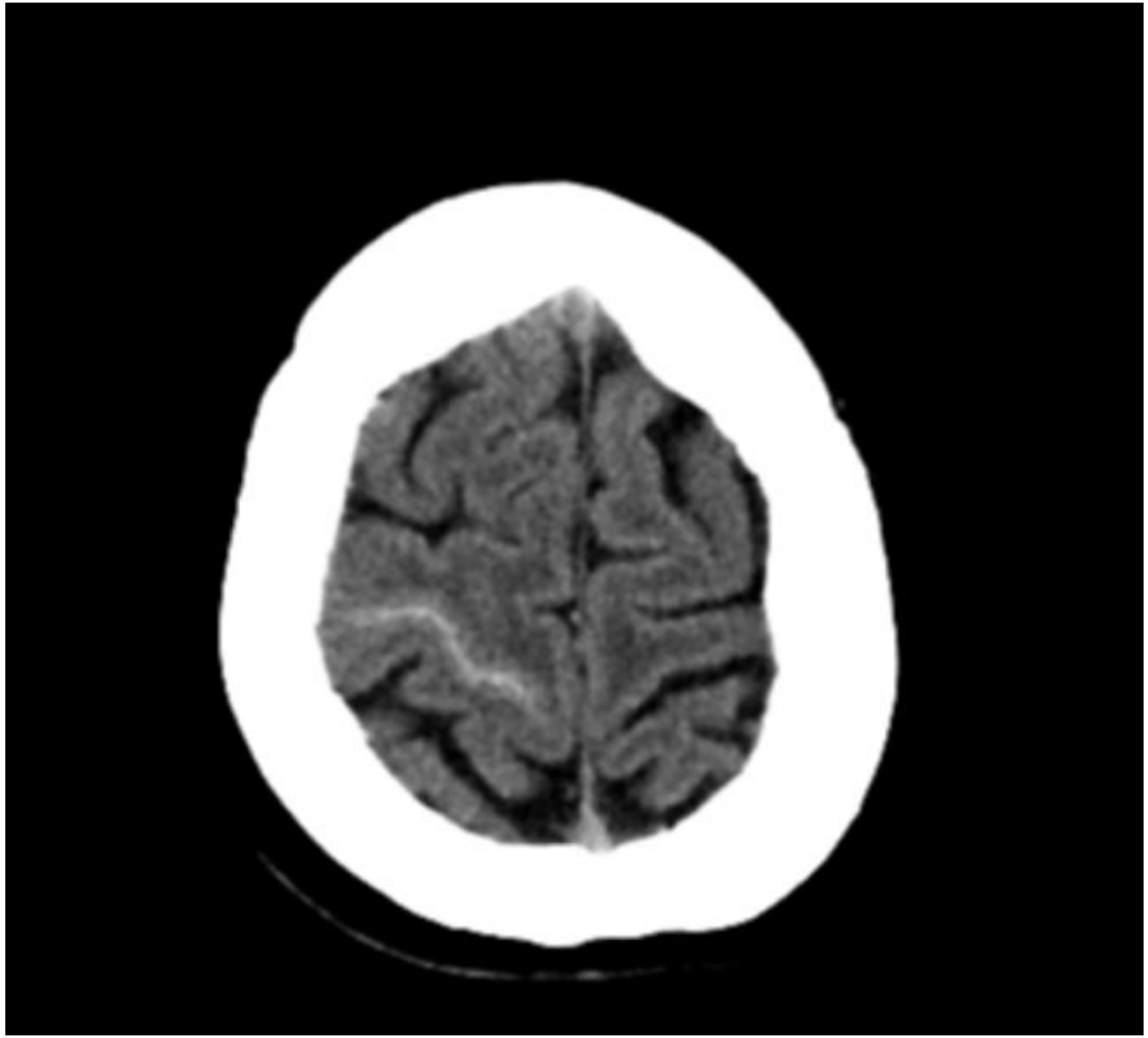


- 32yr old
- Background history of Migraine
- Postpartum day 5. Uneventful delivery
- 2/7 of pulsatile headache with left sided altered sensation and heaviness.
- Collapse in the supermarket following a sudden onset headache. Shaking witnessed.
- Mild left hemiparesis with drift and altered sensation.
- Indistinct discs on fundoscopy



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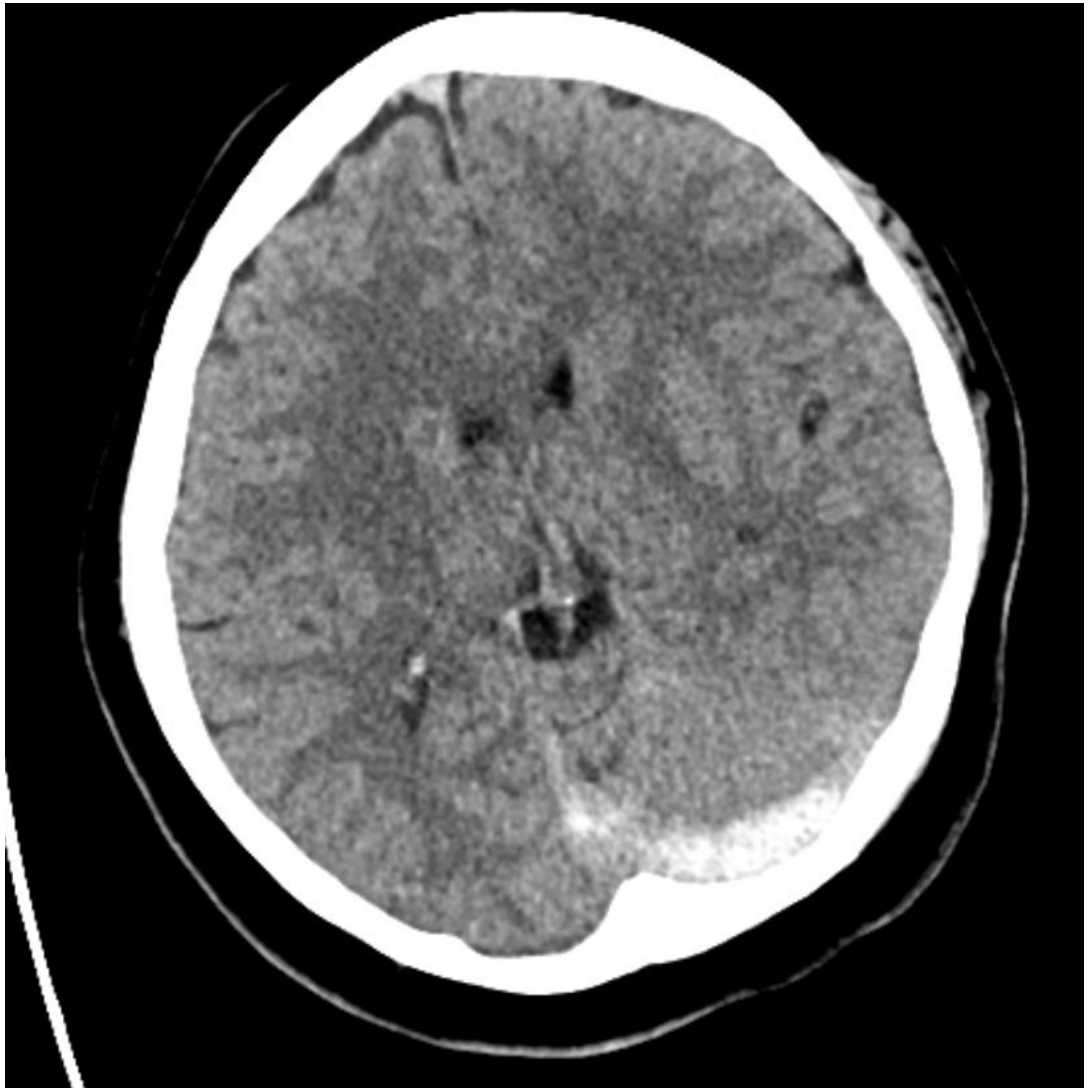

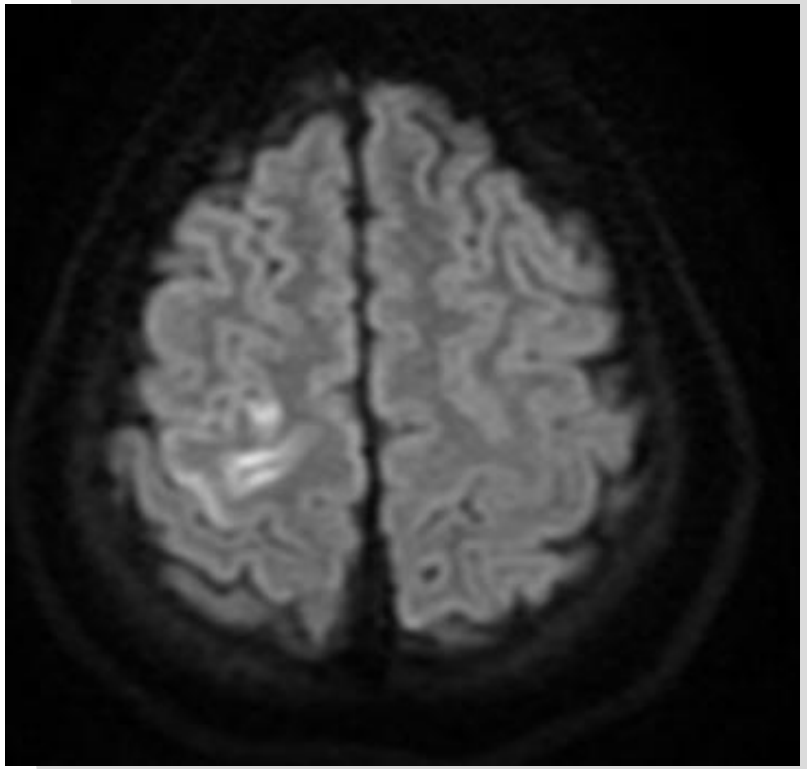

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Red Flags / Key Points

- Significant change in character from previous migraine
- Seizure
- Sudden onset
- Postpartum
- Persistent neurology
- Papilloedema
- Do you want to anticoagulate with a bleed?

New Suspected Papilloedema Pathway

Papilledema Suspected
Optician/GP

Ophthalmology

Regular monitoring for:
- Deterioration in vision*;
- Deteriorating visual fields
- Worsening of papilloedema

*Loss of visual acuity is a late sign following visual field loss.

- Grading/Vessel compromise?
- RAPD?
- **Formal** Visual Fields
- Visual Acuity
- OCT of RNFL if available
- **Consider Pseudopapilloedema**

Imminent risk to vision or papillodoema >grade 3?
Discuss with Neurology and Ophthalmology immediately for consideration of CSF diverson.

Check BP!

Refer to medics

Full neuro examination inc. eye movements.
(**4th and 6th palsies seen with raised ICP***)
History (raised pressure features, risk of clots)

CVST confirmed. Refer to Neurology urgently.

SOL suspected. Refer to Oncology/ Neurosurgery urgently.

Urgent CT/MRI brain
PLUS VENOGRAM!

Common secondary causes:
- Anaemia
- Tetracyclines/fluroquinolones
- Vitamin A excess

See reference below for extensive list.

Lumbar puncture in lateral decubitus
- ***Opening pressure**, cell count, paired serum/CSF glucose and protein*

Refer to Neurology for suspected IIH if:
- Papilloedema confirmed
- Raised LP OP >25cmH_2O; with normal constituents
- **Normal examination***
- Normal brain imaging and venogram

Mollan SP, Davies B, Silver NC, et al. IIH consensus guidelines on management. J Neurol Neurosurg Psychiatry 2018.

Management of IIH Pathway

Presentation

Weight management advice if BMI ≥30 kg/m^2

Predominantly headache with no/minimal papilloedema and no imminent threat to vision.

Take headache history. Evaluate the phenotype.

A feeling of 'pressure' with headache is NOT indicative of raised ICP.

Presence of medication overuse headache?*

† Ensure all painkillers are stopped completely for at least 1 month. Headache may worsen before improving

Treat headache accordingly:
- Consider topiramate if migrainous preventative
- **Warn women of childbearing age regarding teratogenicity + MHRA form**
- Reduces efficacy of oral contraceptives.

NICE guidelines for migraine management https://cks.nice.org.uk/topics/migraine/management/adults/

Worsening papilloedema, visual fields or acuity following ophthalmology review

Ensure the following have been documented:
- Grading/Vessel compromise?
- Formal Visual Fields
- Visual Acuity
- OCT of RNFL if available

Perform **diagnostic** lumbar puncture in lateral decubitus for **opening pressure.**

>25cmH_2O

Refer to Neurology for consideration of CSF diversion.

Consider starting or increasing acetazolamide.
- Usual starting dose is 250-500mg BD. Max 4g daily.

* Warn women of childbearing age regarding possible teratogenicity.

† Medication overuse headache (daily)
Using the following for >3 months:
- Simple analgesia >15 days/month
- Triptans >10 days/month

Case 4

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History

- 52 yr old
- History of SCLC diagnosed 3/12 previously
- Treated with Etoposide combined with carboplatin
- 2 months of headache.
- Started vomiting past 3 days
- Visual ‘greying’ out.

Examination

- Apyrexial
- Alert to Voice
- Meningism
- Grade 3 Papilloedema
- 3rd nerve Palsy
- Areflexic UL

Investigations

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Radiology

- Normal CT Head

Bloods

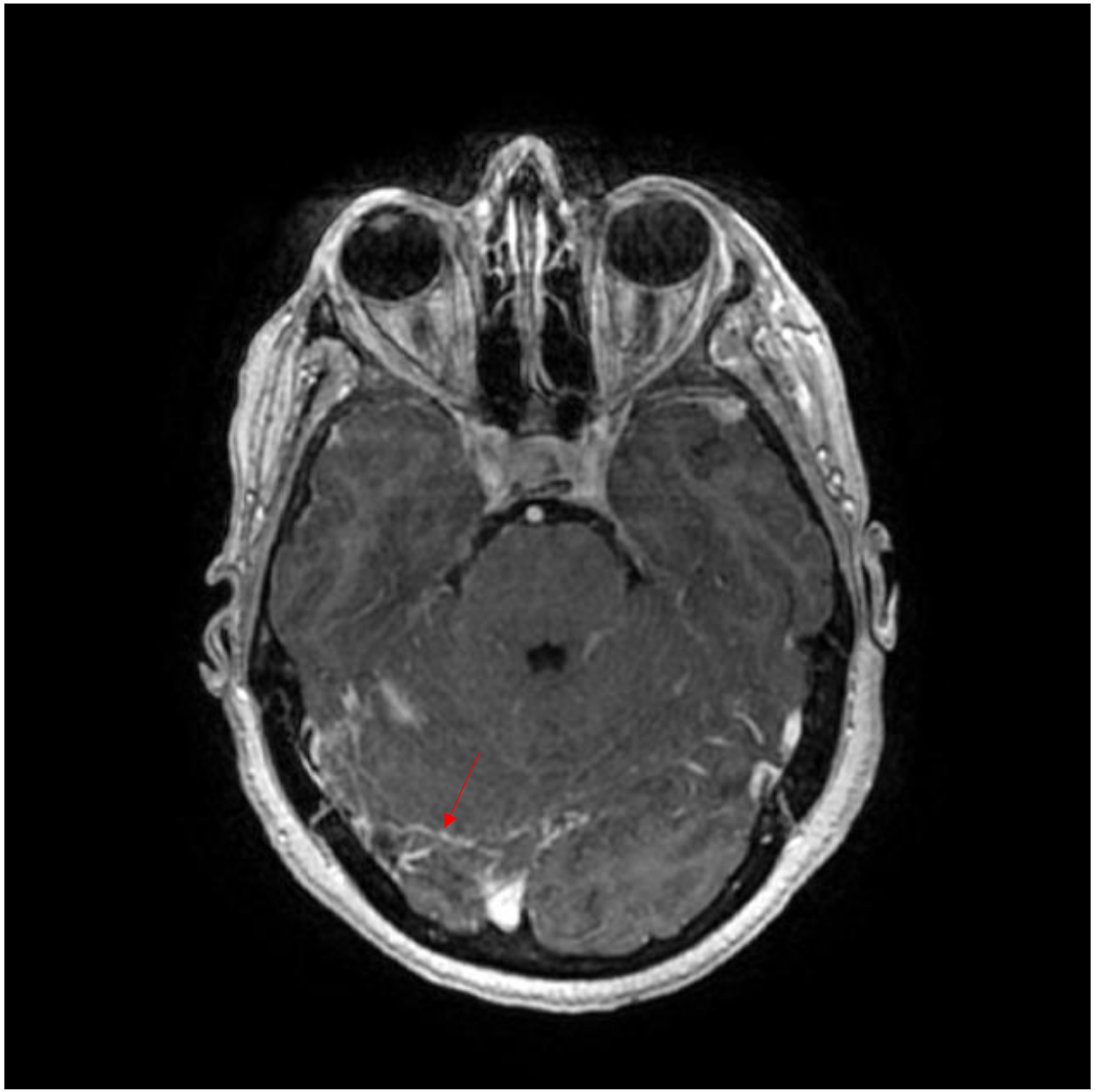
- Neutrophils 0.5

CSF

- Opening Pressure 40 cm CSF
- WCC 35 - lymphocytic
- Protein 4.2g
- Glucose 1.1 Serum 6.4

Normal MRI T1 and T2

Abnormal diffuse linear leptomeningeal contrast enhancement



Case courtesy of Dr Ahmed Abdrabou, Radiopaedia.org. From the case rID: 62020

Key Points

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- Numerous Red flags
  - Immunosuppression
  - History of malignancy
  - Drowsiness on admission with raised pressure features
- Infection requires consideration but if tempo is slow, early CN involvement, malignancy is likely.

Headaches and Space Occupying Lesions

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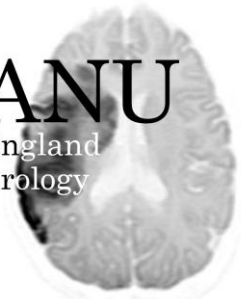

- Sole symptom in only 2%
- Mild to moderate, non-specific, generalised.
- Raised pressure symptoms not usually found.

- More with infratentorial SOLs

- **Progression**
- Lung, breast, melanoma, or lymphoma commonly metastasise.

Schankin. 2007. Cephalgia.

Case 5

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History

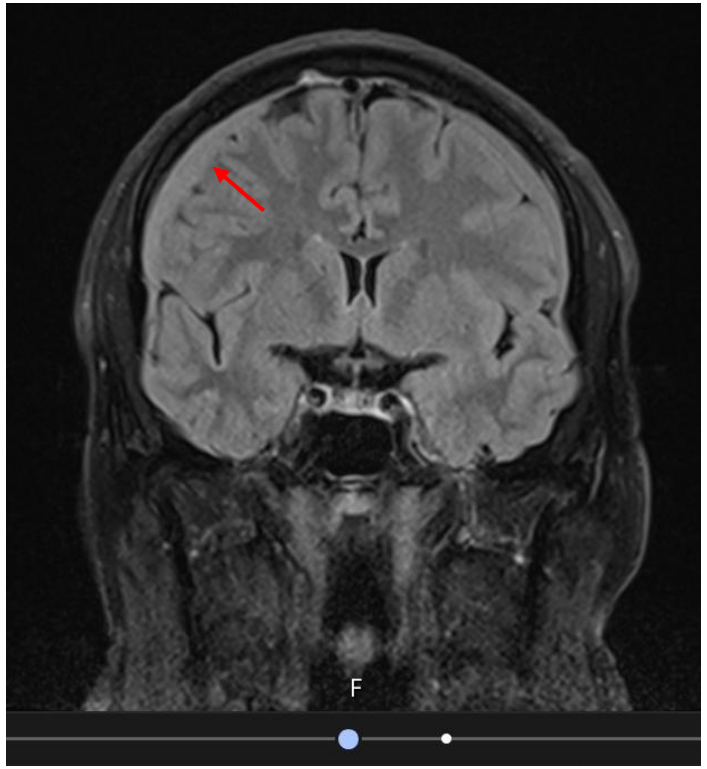
- 56 year old
- Gradually worsening 2 weeks of occipital headache
- Reduced hearing bilaterally
- Worsens on standing and significantly improves lying down
- Worsens on coughing and sneezing

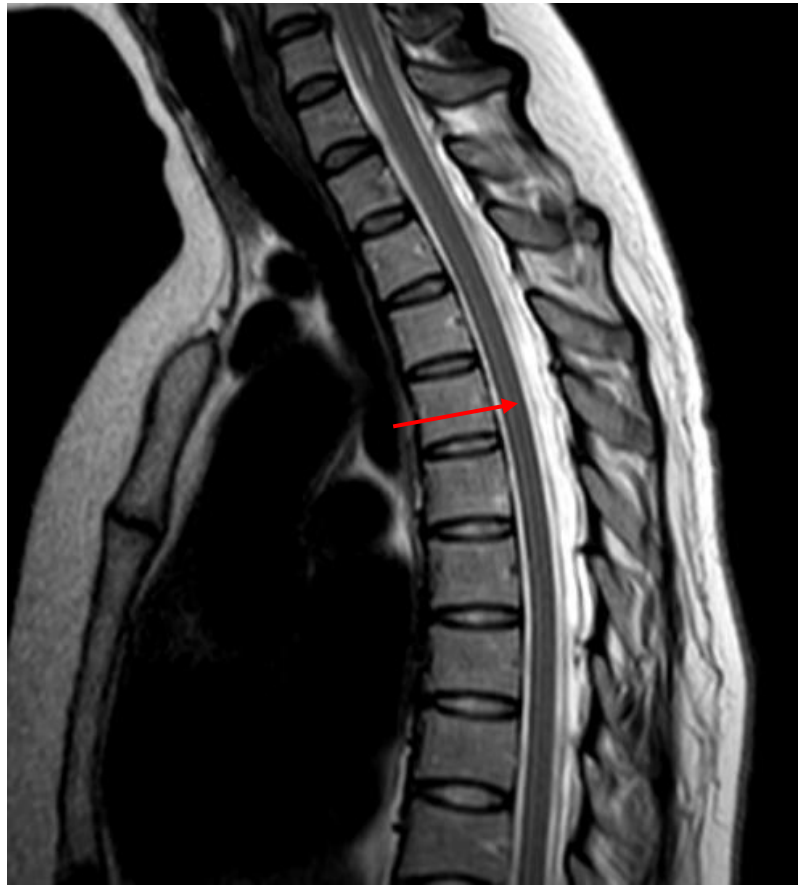
Examination

- Normal examination

Chronic bilateral subdural collections

Epidural collection





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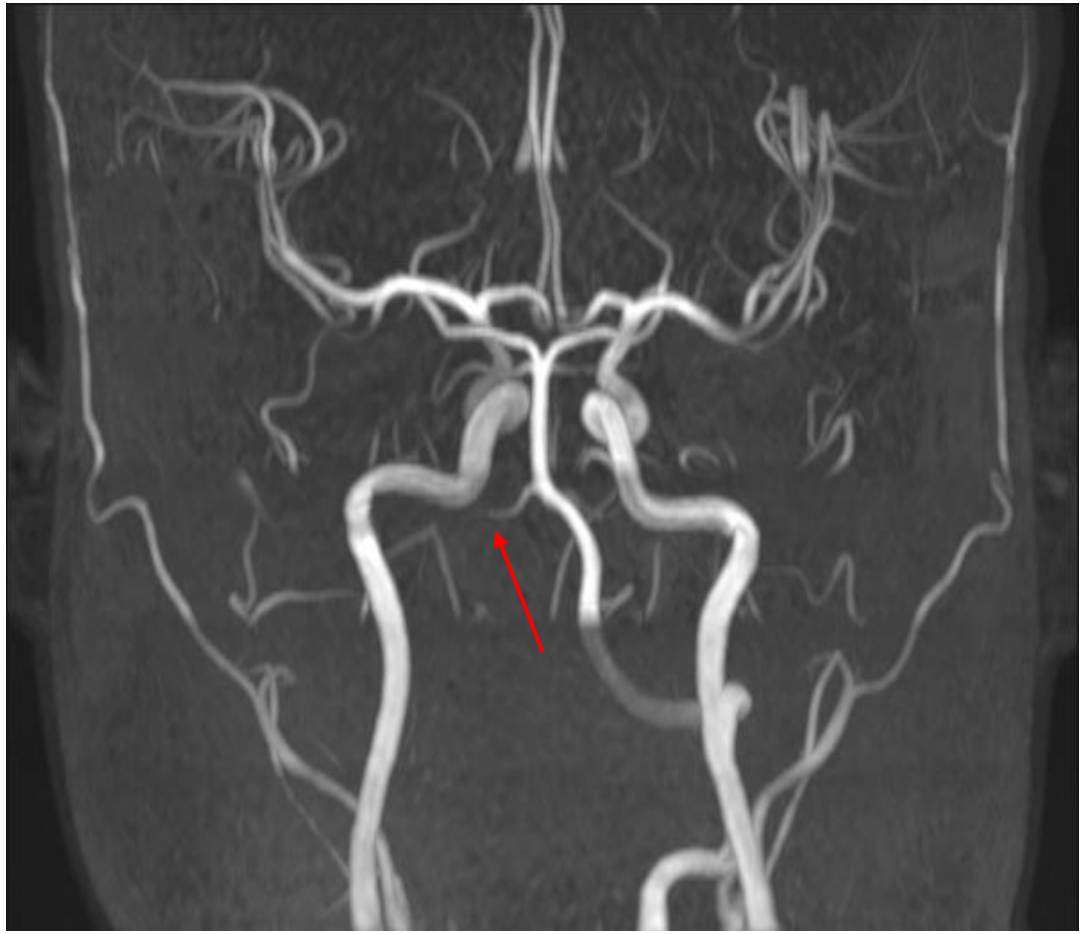
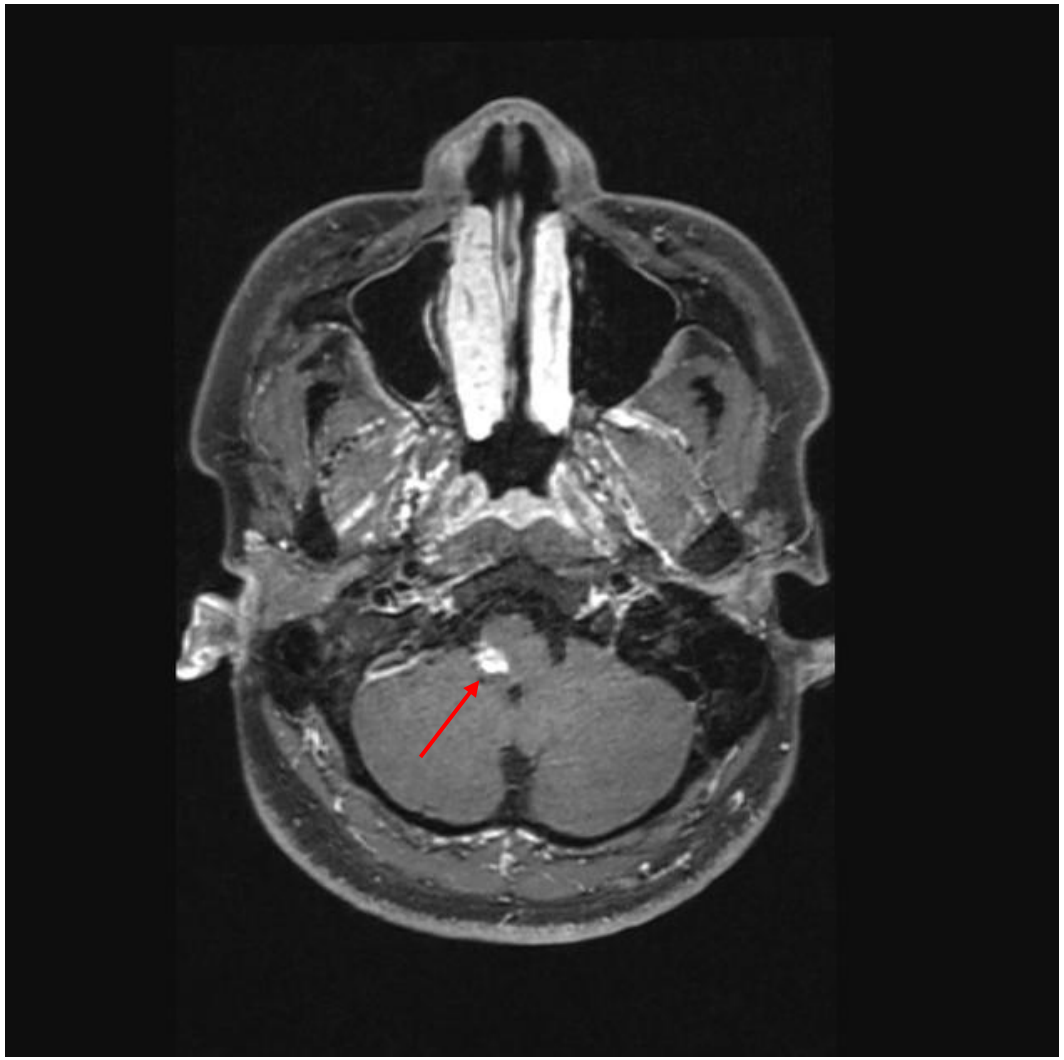
Case 6

- 34yr Nigerian gentleman returned to UK on a plan
- Developed new onset headache on the plane with radiation down the right side of his neck. Complaining of vertigo.
- Attended hospital the next day.
- CT head was normal.
- Treated as migraine. Sent home.
- Unsteadiness on heel-to-toe. Abnormal VOR on the right.





Images courtesy of Radiopaedia.org

Carotid/Vertebral Artery Dissection

Consider in:
- young stroke
- Neck pain/headache with (trivial/no) trauma

Red Flag	Focal Neurology/New-onset refractory headache
Symptoms	CAD: Horner's syndrome (pain?), TIA/stroke symptoms, neck pain, retinal infarct (amaurosis fugax) VAD: Post. Circulation stroke symptoms (lateral medullary syndrome due to PICA)
Investigations	CT/MRI head Angiogram inc neck vessels
Associations	Trauma CTD Pregnancy
Management	Anticoagulation vs antiplatelets (extra vs intracranial) Stenting?
Refer	Neurovascular/Neurosurgery
Further investigations	Repeat imaging? Pseudoaneurysm/ICH

Take home messages

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- Detailed headache history and focused examination
- Exclude red flags
- Be aware of MoH with migraine
- Pressure syndromes – look for papilloedema/relief on lying down.
- Migraine is common. Consider prevention if chronic picture.
- Headache rarely sole presentation of SOL - progression
- Suspect vasculitis/dissection in young stroke.

Thank you ?
Any questions?