

Headache

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Disclosure:
Percept (consultant)
Teva (research support)
RubiconMD

Goals



Understanding of diagnosis of common types of headaches



“red flag” recognition



Work-up



Treatment, medication and integrative therapies

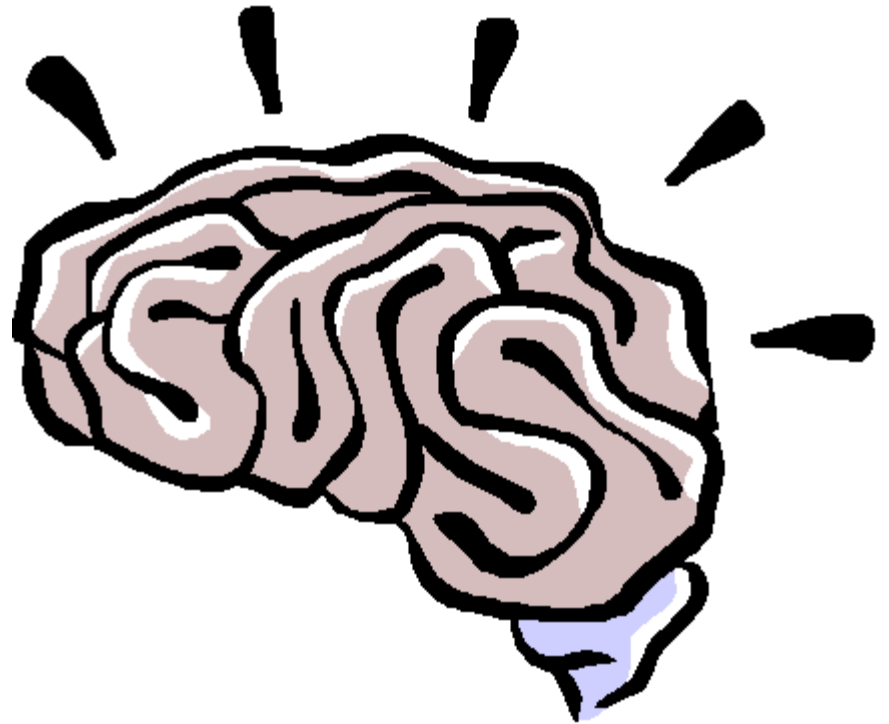


Preparedness for board questions

MOC reflective notes

- Separate primary from secondary headaches
- Be familiar with FDA approve and evidenced treatments
- Engage patients in decision-making

According to article in The Telegraph ,
average attention of humans has fallen
to 8 seconds, less than a goldfish



What is a headache?

- **Full Definition of HEADACHE**
- **1:** pain in the head
- **2:** a vexatious or baffling situation or problem *<meetings had become a giant headache — Franklin Foer>*

Primary vs. Secondary

- Idiopathic
- Non-structural
- Rule-out diagnosis

- “secondary” to underlying disease
- Tumor
- Aneurysms
- Infection
- inflammatory

Office evaluation of headache— the essentials

- How long
- Where on head
- Quality of pain
- Positional
- Nausea, vomiting
- Photophobia/phonophobia
- Dizziness, vertigo
- Focal neurologic symptoms, especially visual
- Duration
- Degree of disability
- Family history

Red Flags

“first or worst”

New and different

LOC

Focal signs

Increasingly worse
ecology



International Headache Society Criteria

Website at the end of talk

Very specific descriptions

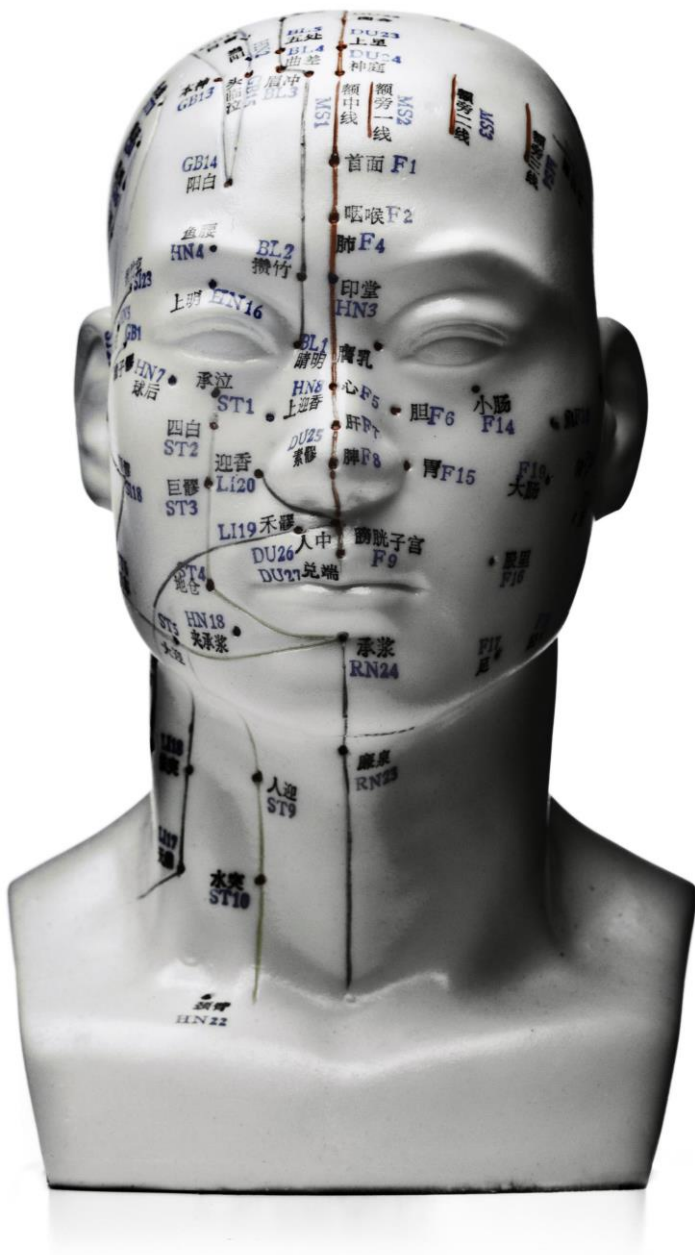
Clearly defined criteria

Useful to refer

Lots of esoterica



Focus on Primary



Headache Locations—it's all about real estate

Forehead Pain

Pain in the forehead is often indicative of tension headaches. Stress and muscle tension are common causes.

Temple Pain

Pain in the temples is often associated with migraines or tension headaches. It may be throbbing or constant.

Pain Behind Eyes

Headaches behind the eyes can indicate cluster headaches or sinus issues, often felt as intense or sharp pain.

Back of Head Pain

Pain at the back of the head can be a sign of tension headaches or occipital neuralgia, often related to neck tension.

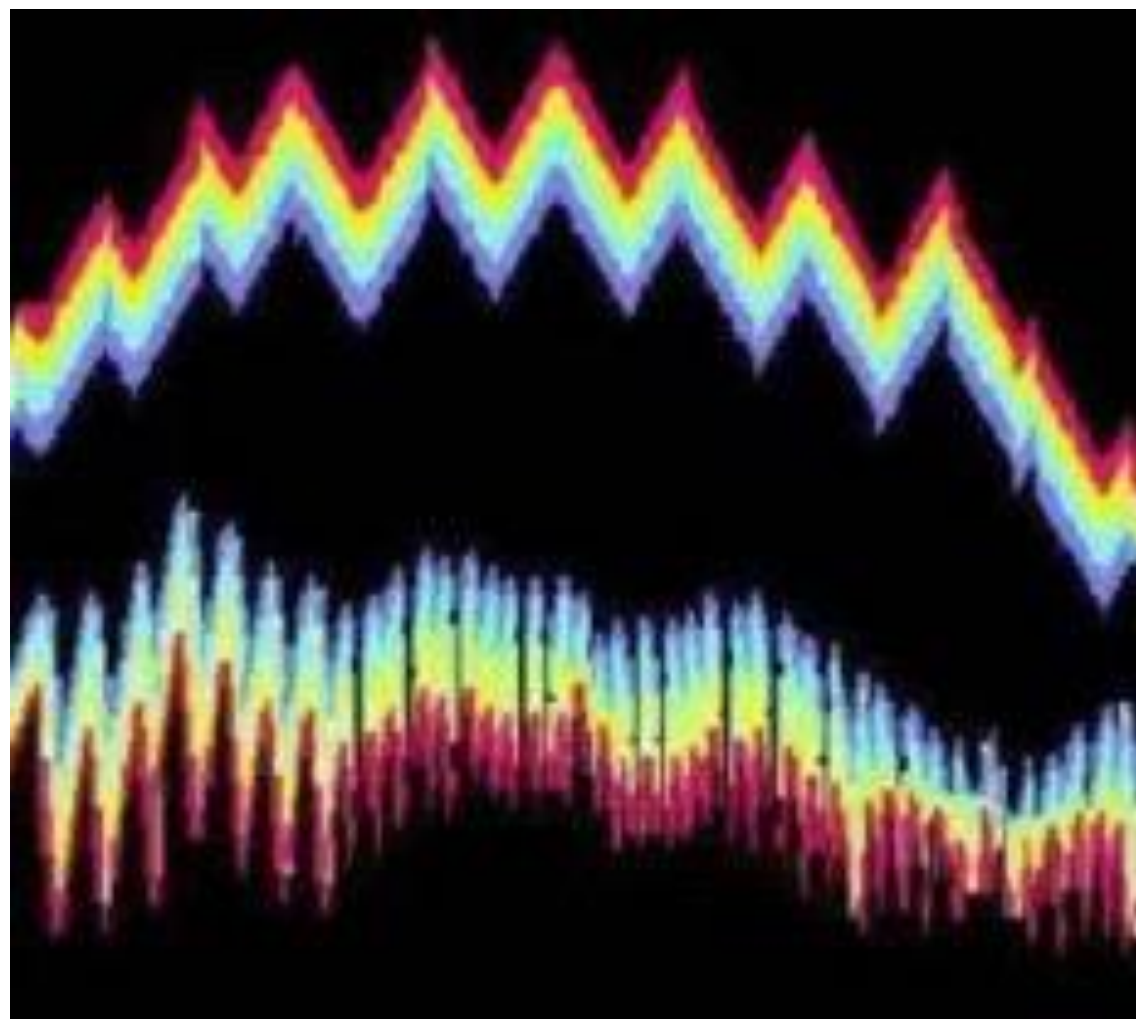
Migraine

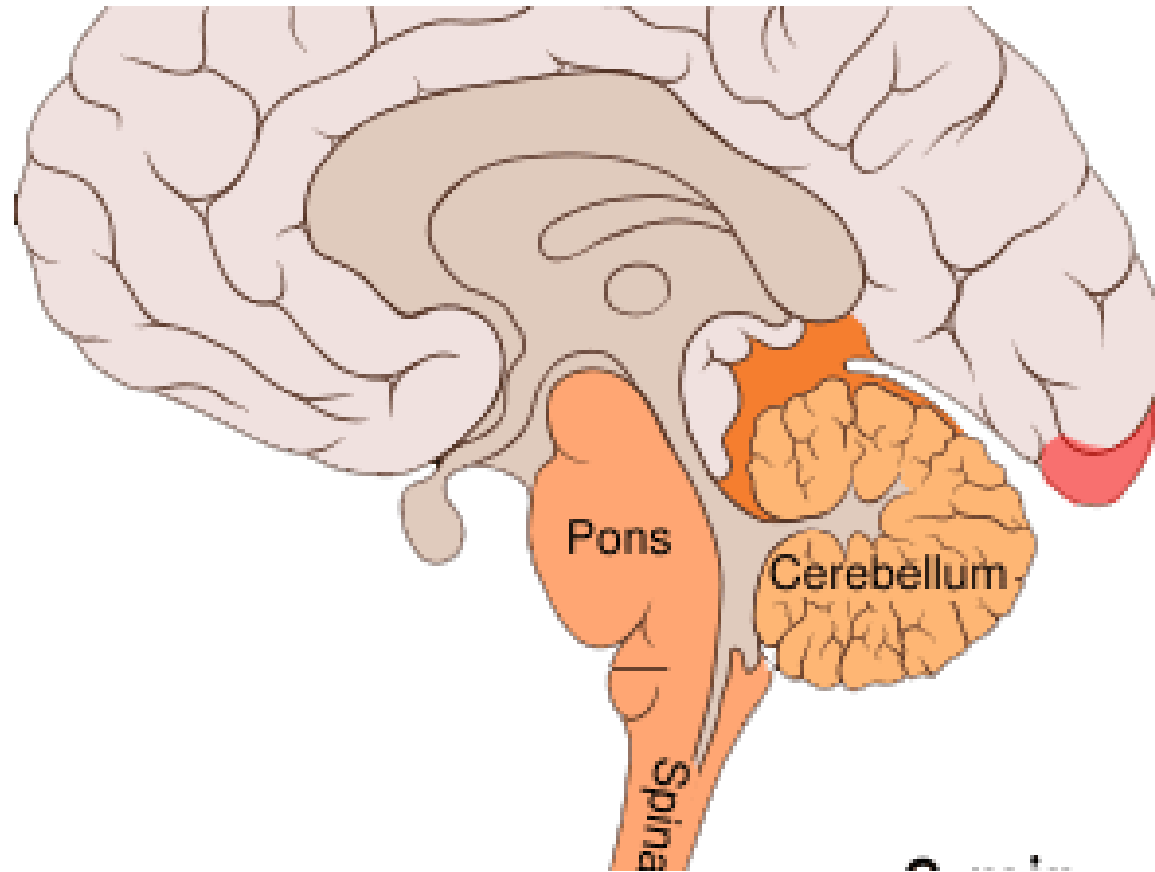
- Unilateral
- Minimum four hours
- Throbbing pain
- Moderate to severe intensity
- Photo/phono
- Nausea or vomiting
- At least five events



Migraine with aura

- At least two attacks
- Fully reversible symptoms
- More than 5 and less than 60 minutes
- Speech, sensory or visual





Cortical spreading depression—wave of depolarization

Other migraine variants

Menstrual

“complicated”

Hemiplegic

Chronic

AHS March 2026

“

The AHS Position Statement calls for diagnostic screening for migraine in girls and women from adolescence through menopause, and recommends that screening be conducted annually as part of preventative healthcare services for women.

— American Headache Society, March 2026

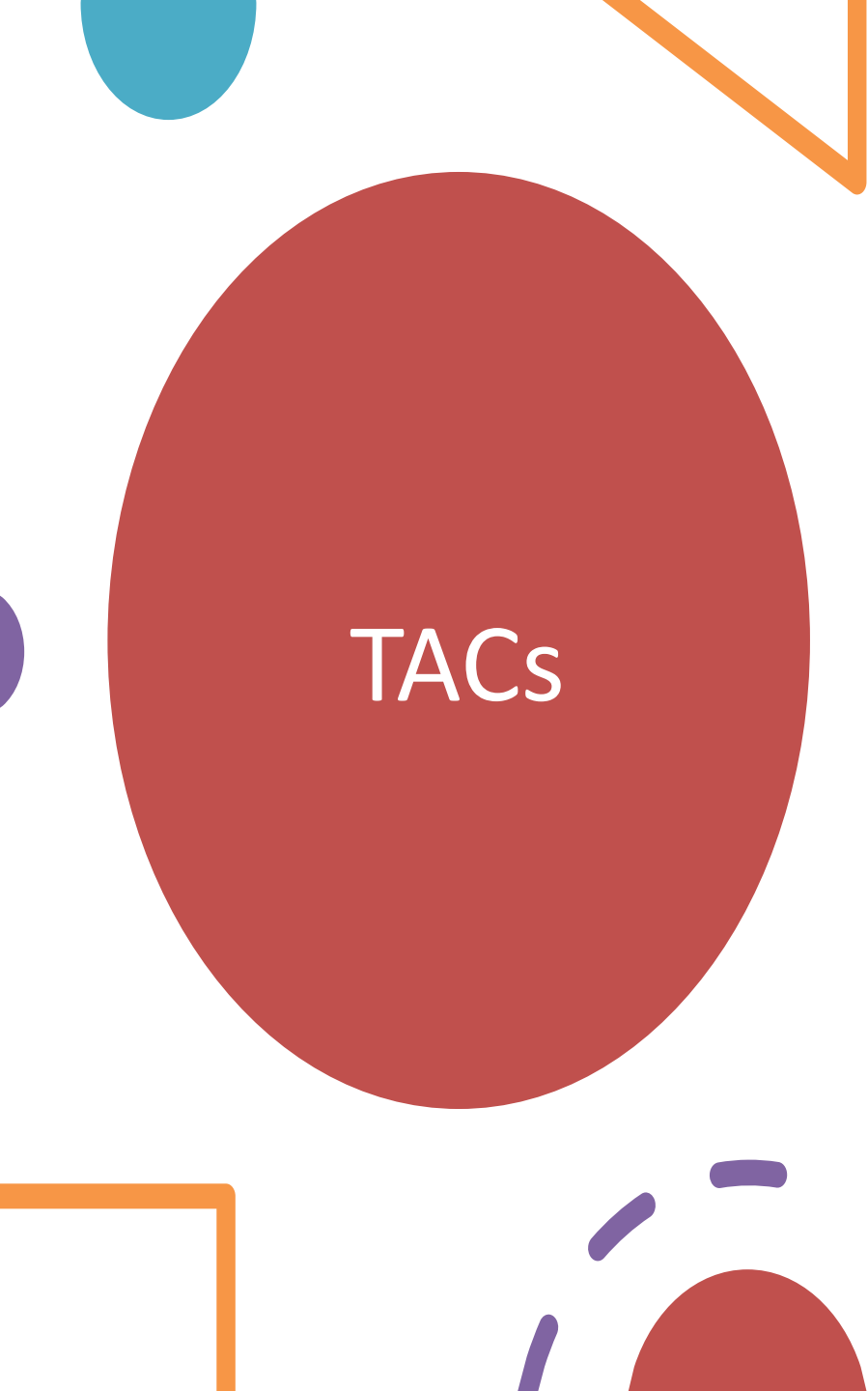


Tension Type Headache “hatband headache”

- Ten episodes
 - Bilateral
 - Pressing/tightening
 - Mild to moderate
 - 30 min to 7 days
 - Variants—
infrequent/frequent/chronic
 - No nausea or vomiting
 - Sound or light sensitivity
- 

Chronic daily headache— what is it?

+
•
o



TACs

- SUNCT
- SUNA
- Cluster
- Hemicrania

SUNCT



This syndrome is characterized by short-lasting attacks of unilateral pain that are much briefer than those seen in any other TAC and very often accompanied by prominent lacrimation and redness of the ipsilateral eye.



5 to 240 seconds, occurring multiple times/day

SUNA

- Attacks of unilateral orbital, supraorbital or temporal stabbing or pulsating pain lasting from 2 seconds to 10 minutes

Cluster Clint Eastwood Headache?



15-180 minutes

Unilateral pain, very severe, same
distribution

Tearing/rhinorrhea/injection/ipsi
hydrosis

Meiosis/ptosis

Cluster sufferers pace, migraine
patients lie in the dark with ice

hemicrania



2 TO 30 MINUTES



INDOMETHACIN
RESPONSIVE



SIDE-LOCKED

When to image and what to order

RED FLAGS

FOCAL SYMPTOMS

AGE

POSITIONAL

CHOOSING WISELY
ARTICLE FOR PATIENTS

CT vs. MRI

CT Scan—blood, bone

- Trauma
- ? SAH
- Acute neurologic changes

MRI

- Acute neurologic changes
- ? Stroke
- Hydrocephalus, IHH
- ? Tumor
- ? Infection
- Imaging of posterior fossa

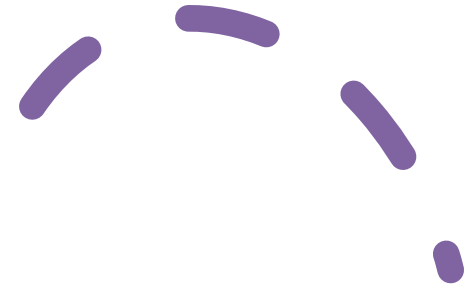
A decorative purple dashed line consisting of five segments of varying lengths, arranged in a curved path on the left side of the slide.

CALL THE RADIOLOGIST

Ask the clinical question

A solid teal-colored circle located at the bottom right of the slide, partially overlapping the red oval background.

CADASIL



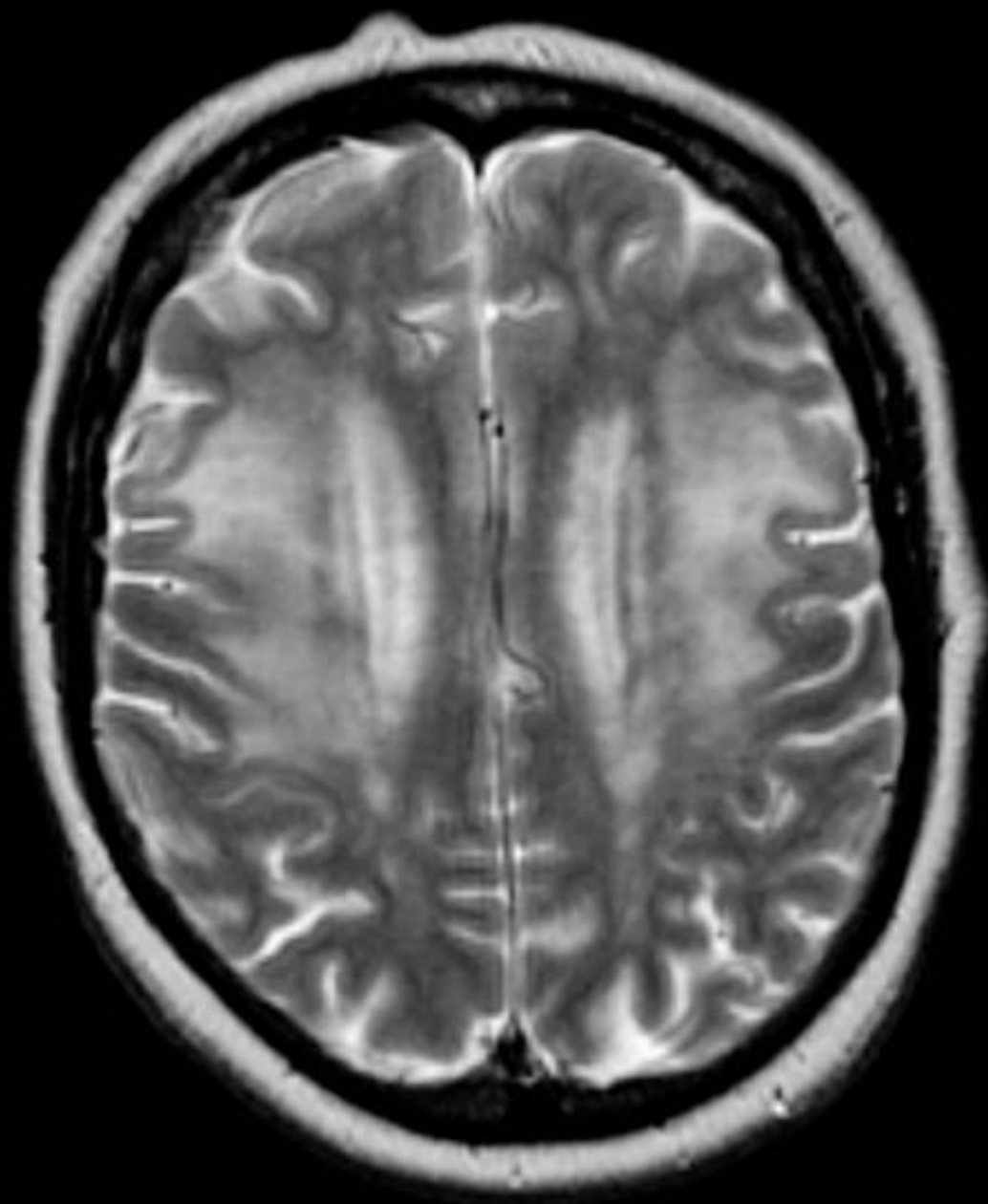
Cerebral autosomal
dominant
arteriopathy with
sub-cortical infarcts

Inherited, notch 3
gene mutation

Migraines and
multiple strokes
progressing to
dementia

Cognitive
deterioration,
seizures, psychiatric
problems

Genetic testing is
available





Reversible cerebral vasoconstriction Syndrome Call-Fleming Syndrome



Can last for weeks



Thunderclap headaches



Focal neurologic signs



Seizures

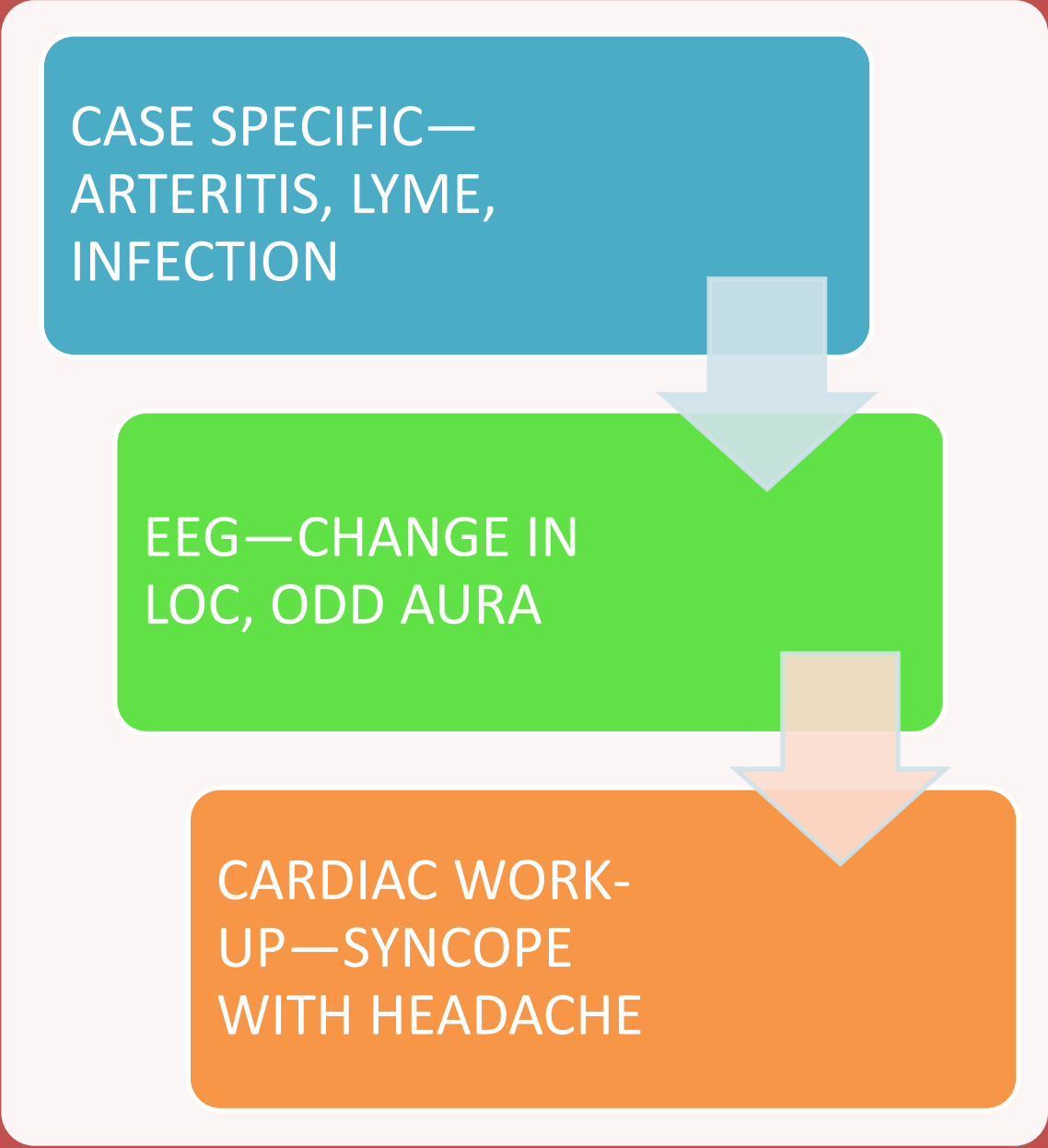


Many potential triggers





Labs,
other
tests



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graph TD; A[CASE SPECIFIC—  
ARTERITIS, LYME,  
INFECTION] --> B[EEG—CHANGE IN  
LOC, ODD AURA]; B --> C[CARDIAC WORK-  
UP—SYNCOPE  
WITH HEADACHE];
```

CASE SPECIFIC—
ARTERITIS, LYME,
INFECTION

EEG—CHANGE IN
LOC, ODD AURA

CARDIAC WORK-
UP—SYNCOPE
WITH HEADACHE

Treatment

Medication vs integrative

- Evidence-based
- How to monitor
- Ecology
- Patient preference

- Evidence-based
- Safety
- Cost
- Patient preference

Guidelines--

AHS 2021 Migraine is excellent

Start low and titrate up for preventives

“minimal effective dose”

Review contraception if indicated

Acute--stratify

2024 New
AHS
statement

New CGRP targeting
medications as first
line therapies

Big step forward

Migraine

Antihypertensives

Anticonvulsants

Antidepressants

antispasmodics

Onabotulinum toxin

CGRP monoclonal antibodies!!! target molecule or receptor

Gepants—CGRP antagonists

Acute mediations

Triptans--formulations

Ergots—potential for side effects

Anti-inflammatories

Anti-nausea

Gepants!--dissove, pills, nasal spray

Little or no role for narcotics/barbiturates

hormonal

Estrogen/progesterone
formulations

Role of HRT

TTH

All off-label

Antidepressants

Anticonvulsants

Antispasmodics

Anti-inflammatories

TACS

Indomethacin—for hemicrania

Triptans

Calcium-channel blockers

Steroids

lithium

procedures

Nerve blocks

Trigger point injections

Onabotulinum toxin

Transcranial magnetic
stimulation

Migraine surgery????



Migraine headband—FDA approved
Arm band
Other neuromodulators

Integrative therapies



YOGA



MINDFULNESS



TAI CHI



HERBS



VITAMINS/SUPPLEMENTS



NUTRITION



ACUPUNCTURE



MASSAGE

Apps for tracking

Iheadache

My migraine

migrainebuddy

Case One

Jane, age 24, grad student

No medical problems besides headache

Occurs several times/month

Throbbing pain, usually behind her right eye

Preceded by floating wedge shape that glows and crosses from one side to the other

Needs dark and quiet room when it happens

Usually occurs one day before period and mid-cycle

Diagnosis?

Migraine with
aura

Menstrual
migraine

TIA

Tension-type
headache

How would you treat?

Continuous combined
oral contraceptive

Trial of topiramate

Abortive plan: triptan
plus NSAID

OTC

Case Two

Ashley, age 19, college student

Throbbing pain over forehead and under eyes

Worse with movement

Light bothers her

Slight nausea

Runny nose, some tearing

Very anxious about school, headaches, life

Diagnosis?

Sinus
headache

Migraine
without aura

Tension-type
headache

Headache attributed to Rhinosinusitis

Diagnostic criteria: Frontal headache accompanied by pain in one or more regions of the face, ears or teeth and fulfilling criteria C and D. Clinical, nasal endoscopic, CT and/or MRI imaging and/or laboratory evidence of acute or acute-on-chronic rhinosinusitis^{1;2} Headache and facial pain develop simultaneously with onset or acute exacerbation of rhinosinusitis. Headache and/or facial pain resolve within 7 days after remission or successful treatment of acute or acute-on-chronic rhinosinusitis.



Notes: Clinical evidence may include purulence in the nasal cavity, nasal obstruction, hyposmia/anosmia and/or fever. Chronic sinusitis is not validated as a cause of headache or facial pain unless relapsing into an acute stage.

How would you treat?

Preventive med

Antibiotics

Nasal spray

Biobehavioral
therapies

Case Three

Tom, age 53, no headache history

Wakes up at 4 a.m. at least half the month with dull headache

Pain lasts at least 15 minutes, some occasional nausea associated

NSAIDs are not helpful

No autonomic symptoms

Diagnosis

Cluster

Migraine

Tumor

Aneurysm

Other

Treatment?

Verapamil

Lithium

Amitriptyline

coffee

Case Four

Christine, age 42

Works in an office

Frequent headache of minor to moderate severity but annoying

Band around her head, neck pain

Mild phonophobia, no other symptoms

Has been present for years

Exam is normal other than paracervical trigger points

Diagnosis?

Migraine without aura

Chronic Daily headache

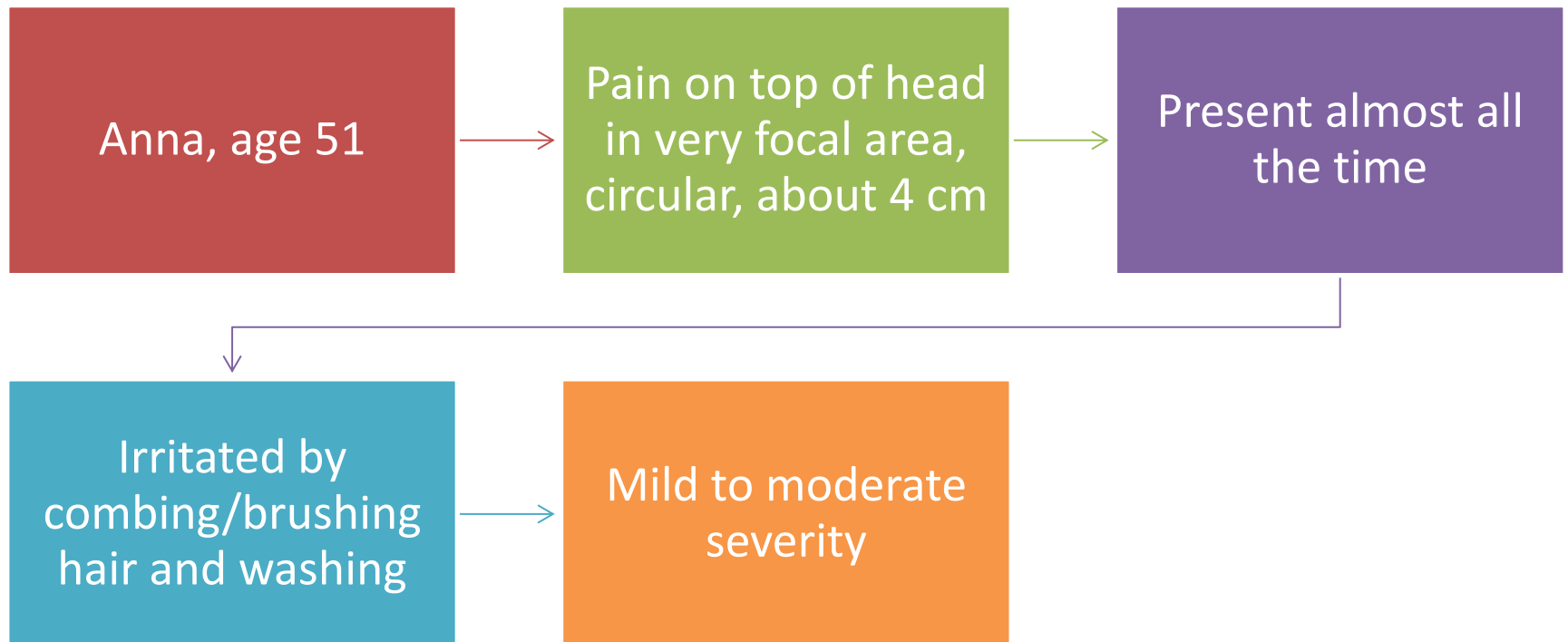
Episodic Tension-type headache

Chronic Tension-type headache

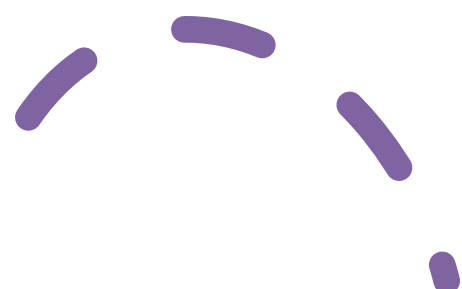
How to treat Christine

- Physical therapy
- Amitriptyline
- Muscle relaxants
- Exercise/yoga therapies
- psychotherapy

Case Five



Diagnosis



Vasculitis

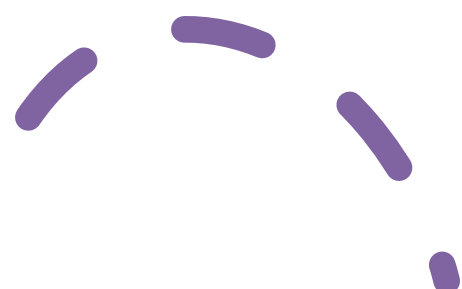
Migraine

Tumor

Skin lesion

Nummular headache

How to treat?



Gabapentin

Amitriptyline

Topiramate

clonazepam

Case 6

47 yo woman with migraine with both visual and sensory aura



Never had previous complications



Getting married



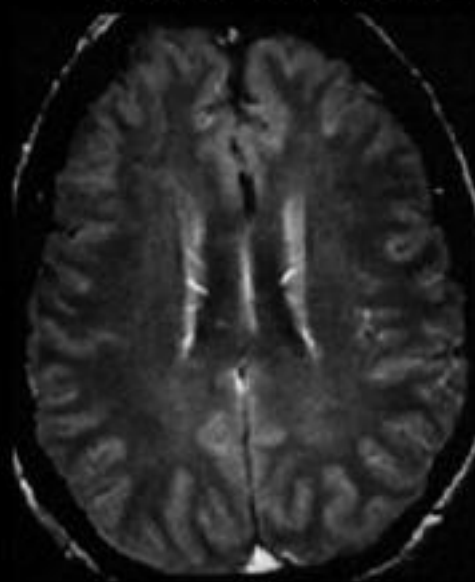
Placed on birth control patch by her PCP for contraception



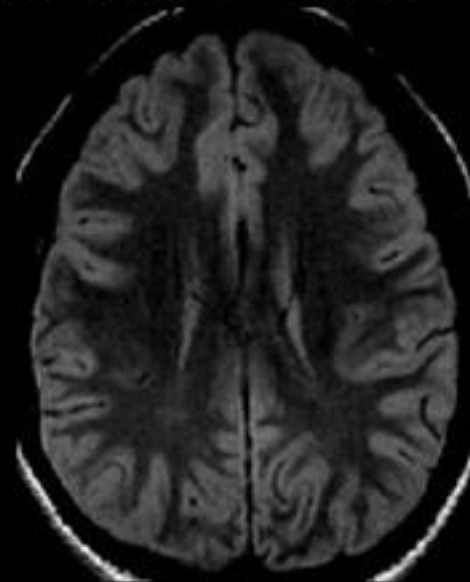
No FH

- Leg cramps first—"muscle spasm"
- Shortness of breath
- Right body weakness

Sagittal Sinus Thrombosis: *Altered flow void on PD-MRI*



↑
SSST



Normal

Poor outcome

Migraine with aura

Father had coagulopathy—Factor 5
Leiden thrombophilia—had a number of
strokes and an MI before the age of 50

? Other types of birth control

Maintained on warfarin—had persistent
increased intracranial pressure
headache plus migraines

Case 7



Hannah, college student, age 19, LH



Occasional throbbing headache, has scintillations followed by pain



Studying animal science, goes to Zambia for a semester



Arrives on a hot day to rural village and goes running

CAN'T SEE TO THE LEFT

LEFT ARM AND FACE TINGLING

UNABLE TO TALK

THROBBING EXCRUCIATING HEADACHE 30
MINUTES LATER

Transferred to Lusaka



- 
- Given some medication intravenously
 - Process cleared
 - Had a few headaches with scintillations after
 - Came to see me about three months after arriving home

- Ecology—was on estrogen-containing birth control
- Really hot and had not been drinking much water...

What happened?

What would you recommend?

Websites

- <http://www.headaches.org/pdf/MIDAS.pdf>
- <http://www.americanheadachesociety.org/>
- <http://www.headaches.org/>
- <http://www.achenet.org/>
- <http://itunes.apple.com/us/app/headache-diary-lite/id309227463?mt=8>
- <http://www.ncbi.nlm.nih.gov/pubmed/22671714>

