The Headache Diagnostic Root

¶ 3.1

HEADACHE
(Commonest Neurology Referral)

Primary Headaches

Primary = {Migraine, Tension-Type, ...}

Conditions in their own right.
The vast majority of cases.

Secondary Headaches



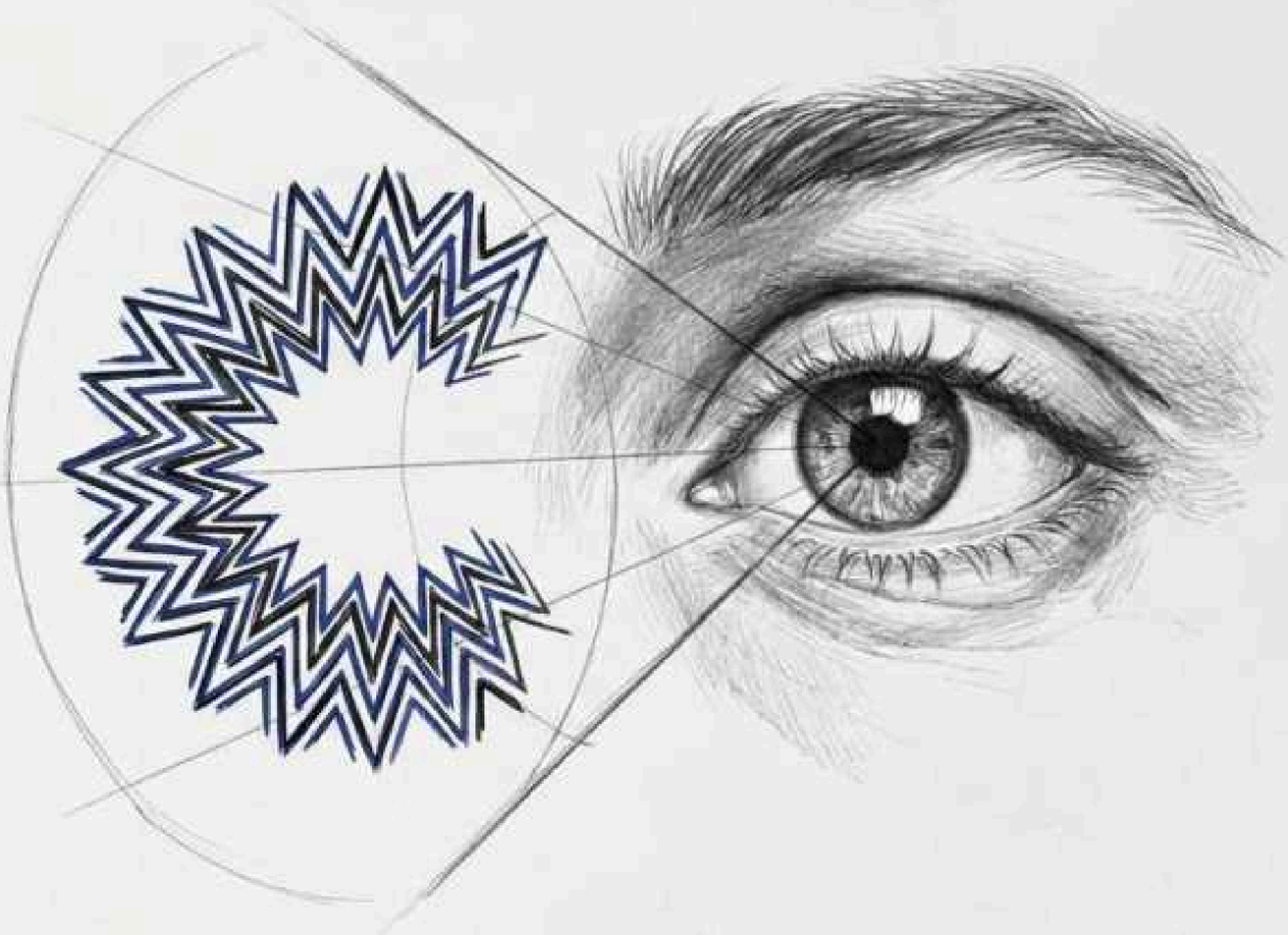
Caused by another underlying condition.
A small minority, but potentially serious.

Migraine Clinical Presentation and Demographics

¶ 3.2

Demographic Math
Prevalence ≈ 1/7 worldwide
Sex Ratio (♀:♂) = 3:1
Aura Probability ≈ 25-33%

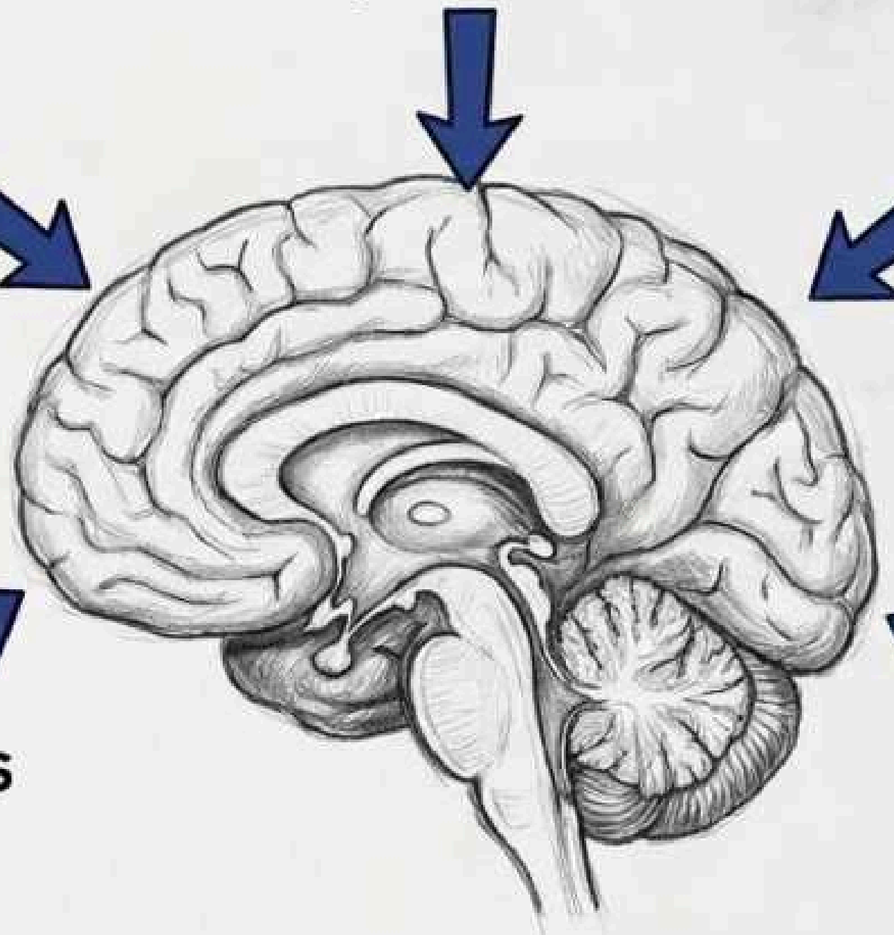
Clinical Profile	
Quality:	Moderate to severe, throbbing.
Location:	Often unilateral.
Duration:	Hours to days.
Associated:	Nausea, photo/phonophobia.
Aura:	Visual (zigzags) or sensory (tingling) preceding the pain.



Migraine Pathophysiology and Trigger Vectors

¶ 3.3

Disorder of brain function + Strong genetic component.



Leading cause of disability in young & middle-aged adults.

Evolution of Acute Abortive Therapies

¶ 3.4



Acts on Serotonin Receptors

Phase 1 (Early Intervention)

- Simple painkillers
- Anti-sickness medicines (anti-emetics)

Phase 2 (Early 1990s)

- Triptans introduced

Phase 3 (Present)

- Newer non-triptan drugs (for patients who cannot tolerate or fail triptans)

Preventative Strategies and Molecular Blockade

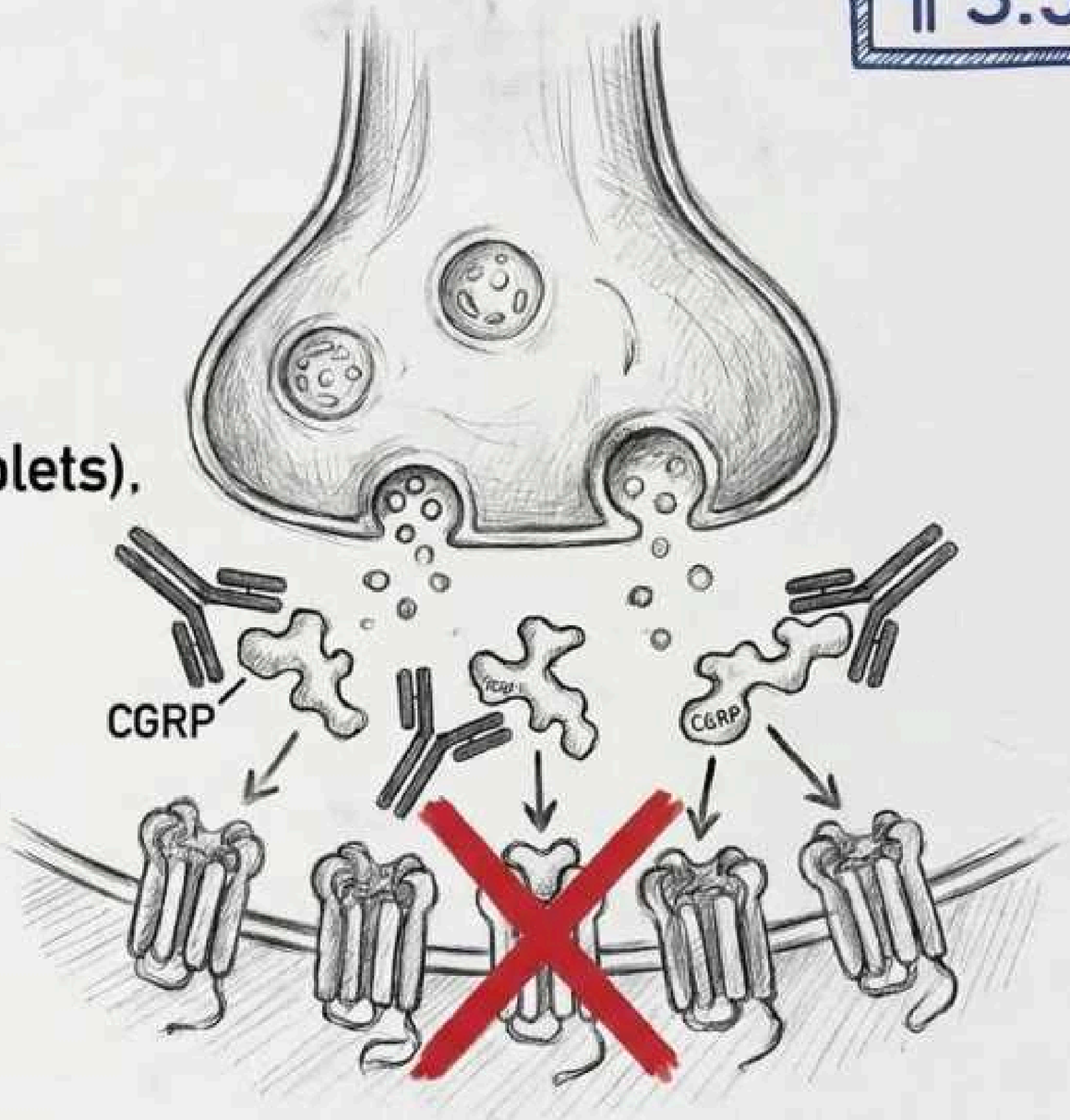
¶ 3.5

Indication: Taken daily to reduce attacks in frequent migraineurs.

Older Modalities:
Anti-hypertensives (blood pressure tablets).
Antidepressants.

Modern Modalities (2018+):
Anti-CGRP (Calcitonin Gene-Related Peptide) monthly injections.
First drugs specifically designed for migraine prevention.

Chronic Modality:
Botulinum toxin injections.



Tension-Type Headache: The Most Common Variant

¶ 3.6



$$\text{Tension_Features} \cap \text{Migraine_Features} = \varnothing$$

(Lacks the features of migraine)

Clinical Profile

- Quality: Dull, pressing ache.
- Location: Bilateral.

Management Protocol

Step 1: Simple painkillers.

Step 2: Attention to lifestyle (Stress reduction, Sleep hygiene, Posture correction).

Cluster Headache: Severe and Cyclic

¶ 3.7

Chronobiology & Demographics

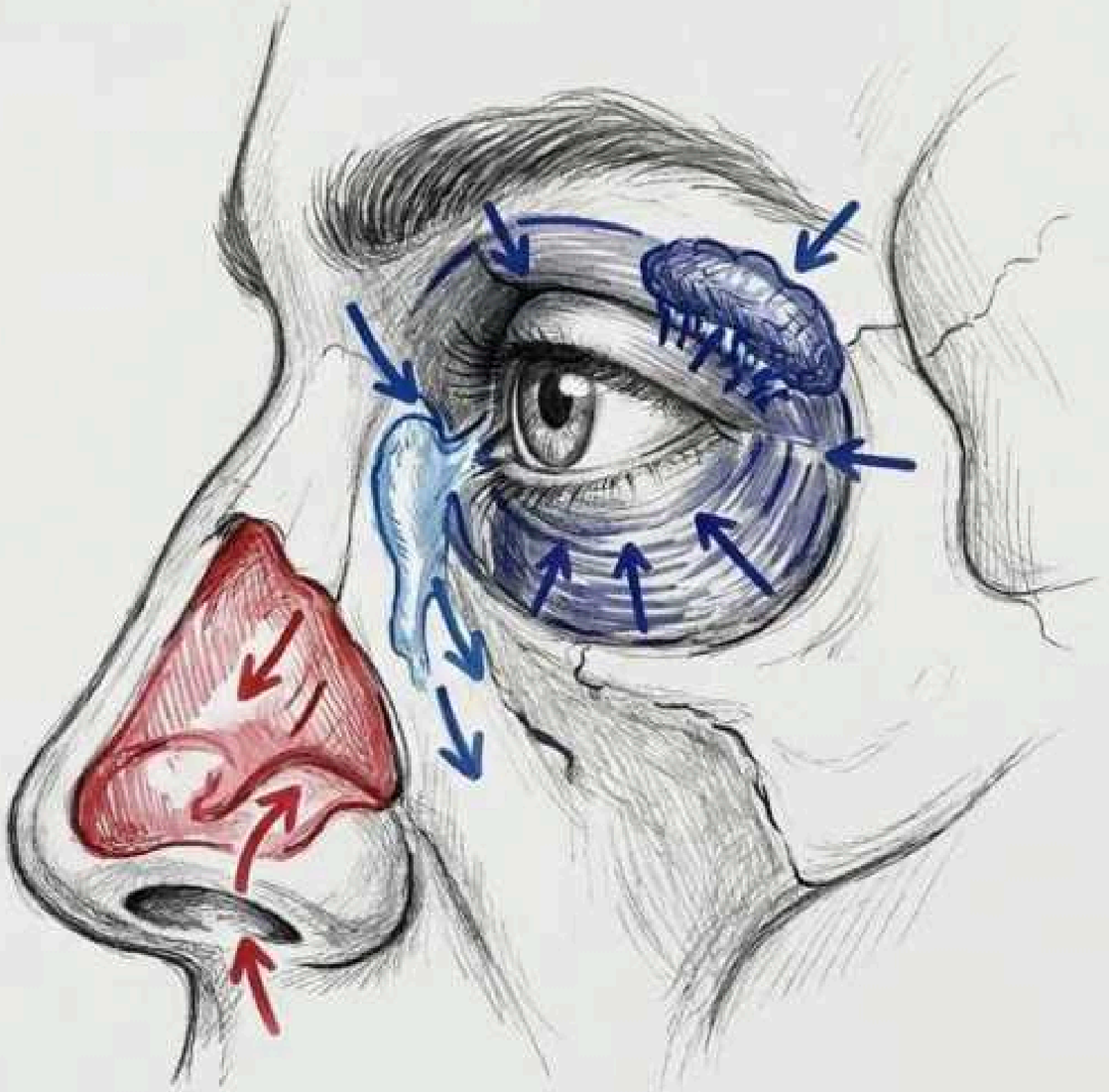
Prevalence = Rare
Sex Ratio = ♂ > ♀
Δt (Duration) = 15m to 3h

Clinical Profile:

Extremely severe, intense pain localized around one eye (unilateral). Occurs at the exact same time each day for weeks (cluster periods).

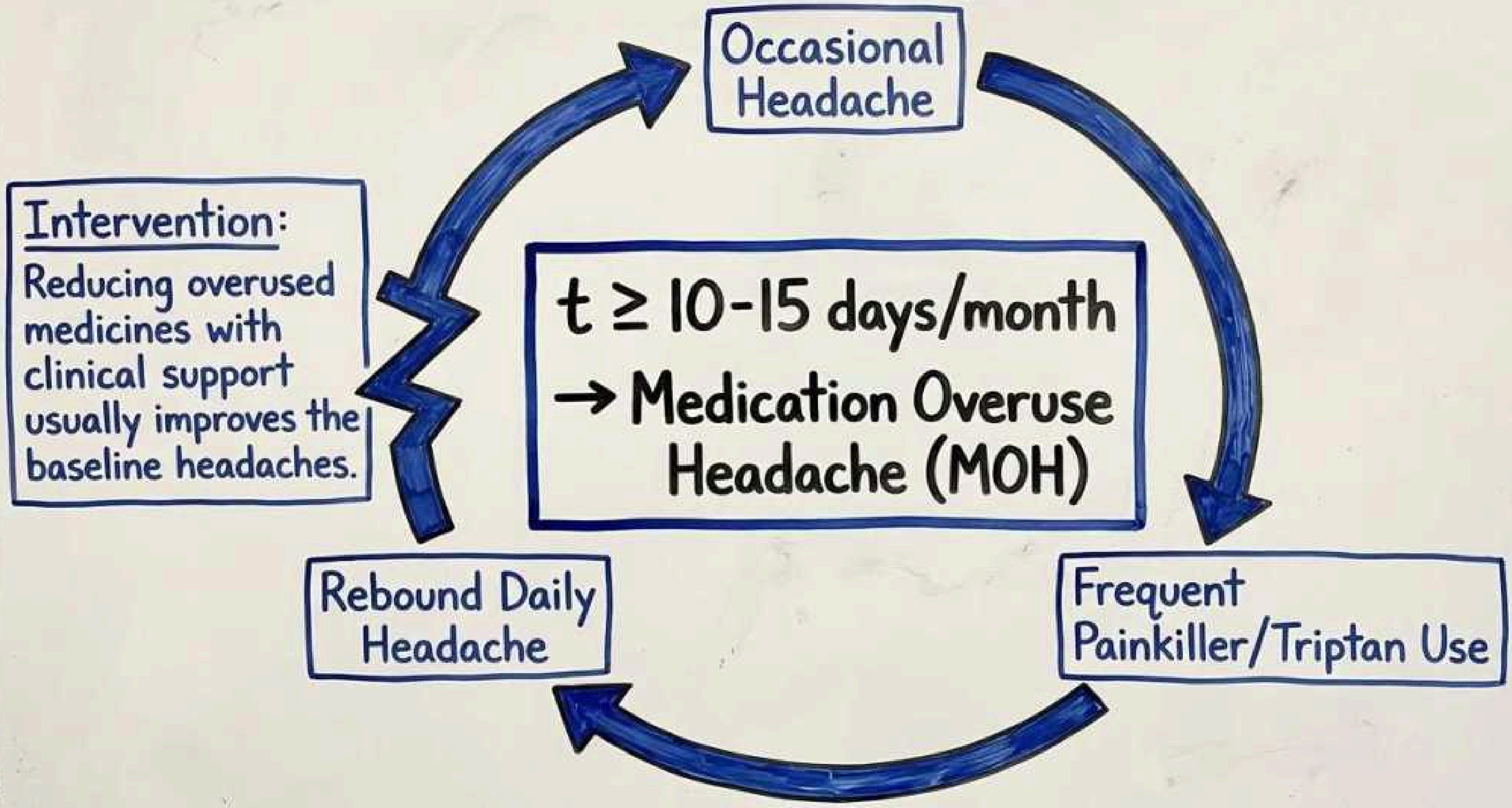
Acute Treatment:

High-flow O_2 + Triptan injections.



The Medication Overuse Chronification Loop

¶ 3.8

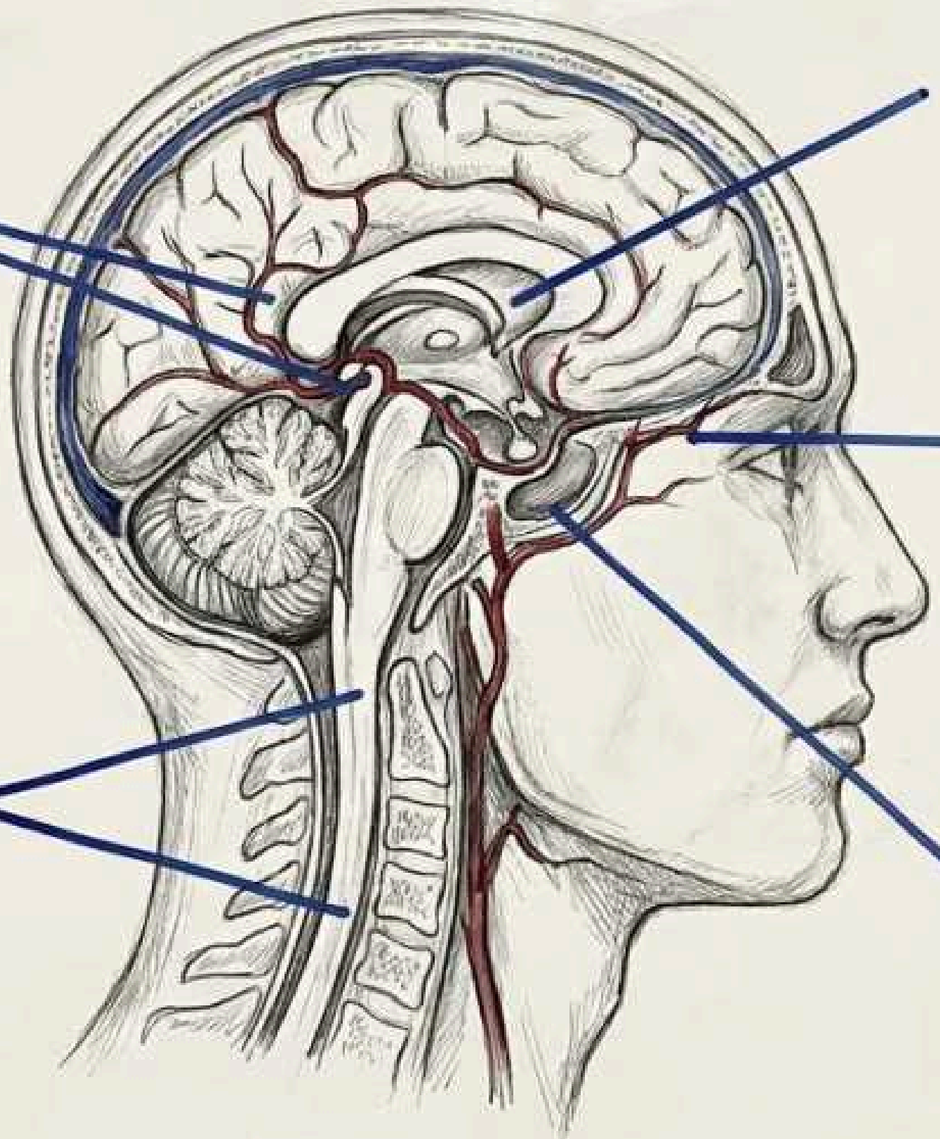


Secondary Headache Red Flags

¶ 3.9

Blood Vessels:
Sudden, severe "thunderclap"
→ Subarachnoid Haemorrhage.

Meninges/Neck:
Fever + Neck stiffness + Rash
→ Meningitis.



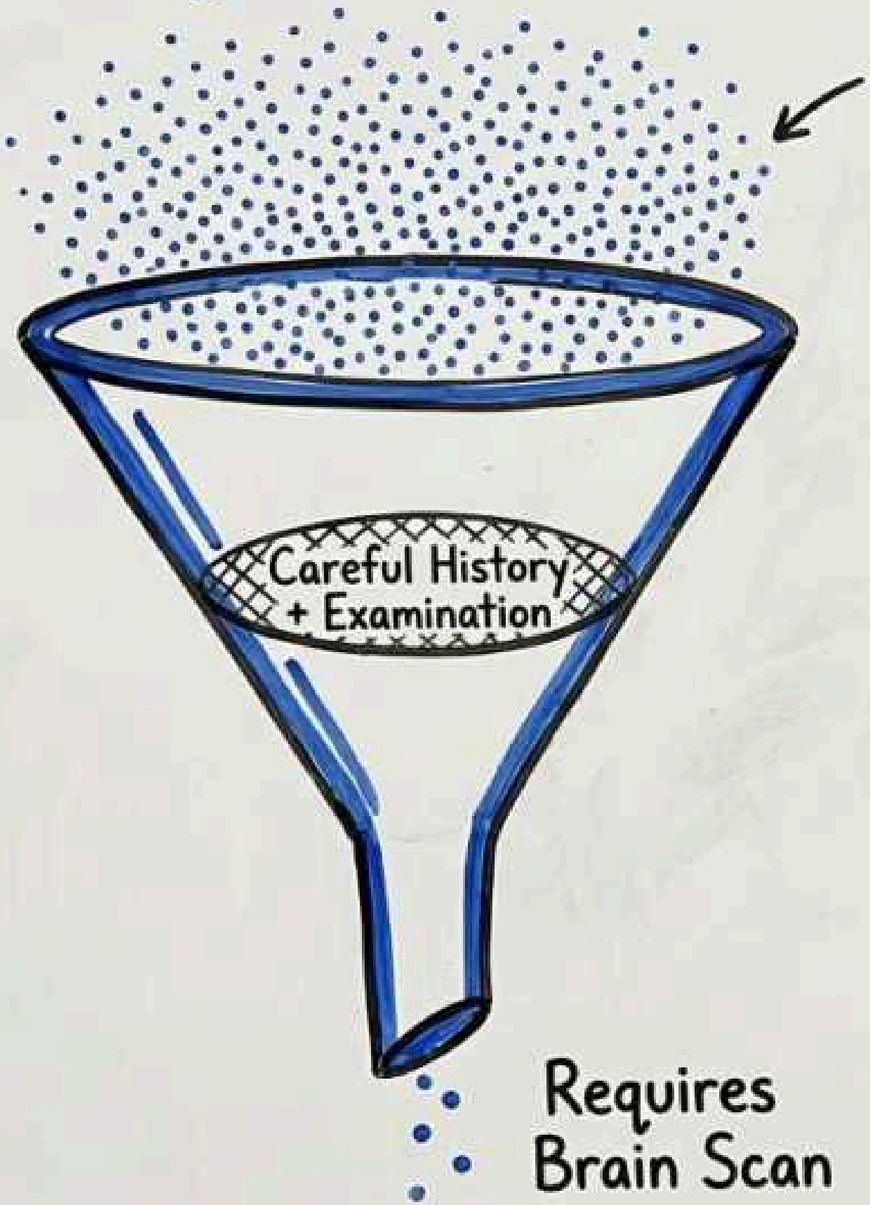
Ventricles (ICP):
Worse on lying/coughing/straining + vomiting
→ Raised Intracranial Pressure.

Temporal Artery:
New headache
>50 years old
→ Giant Cell Arteritis
(Ref: Medicine 533 B).

Systemic:
New neurological signs OR patient with cancer/weak immune system.

The Diagnostic Filter and Imaging Guidelines

¶ 3.10



Clinical Axioms

- Scans rarely find a cause in typical primary headaches lacking red flags.
- The Risk of Over-Scanning: Incidental findings cause unnecessary patient anxiety (Ref: Medicine 534 B).
- Most patients do not need scans; clinical history is the primary diagnostic tool.

Primary Headache Differential Matrix & Synthesis

¶ 3.11

	Location	Quality	Duration	Autonomic Features
Migraine	Unilateral	Throbbing	Hours-Days	Nausea, Aura
Tension	Bilateral	Pressing/Dull	Variable	None
Cluster	Orbital (Unilateral)	Intense	15m-3h	Eye watering, runny nose

Synthesis:

1. Primary headaches are common, disabling, but highly treatable.
2. Monitor closely for the Medication Overuse loop.
3. Filter for Red Flags to catch the serious minority.

Next → Epilepsy and Blackouts