

Migraine

Neurology Update

Satnam Singh Nijjar, MD FRCPC

Neurology

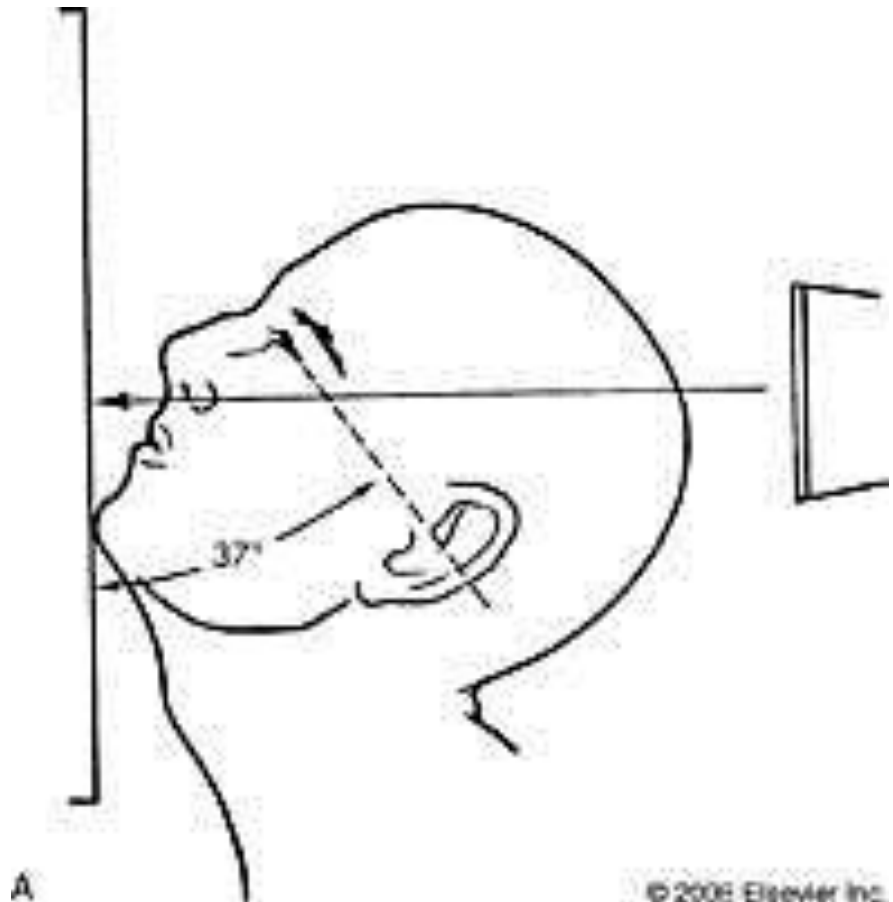
March 2, 2018

Objectives

- Identify 'red flags' indicative of secondary headaches
- Identify and diagnose migraine/ chronic migraine
- Better understand hormonal influences
- Improve our understanding of migraine management

Headache vs. facial pain

- An arbitrary distinction that is useful clinically
- Pain above the orbitomeatal line = headache
- Pain below = facial pain

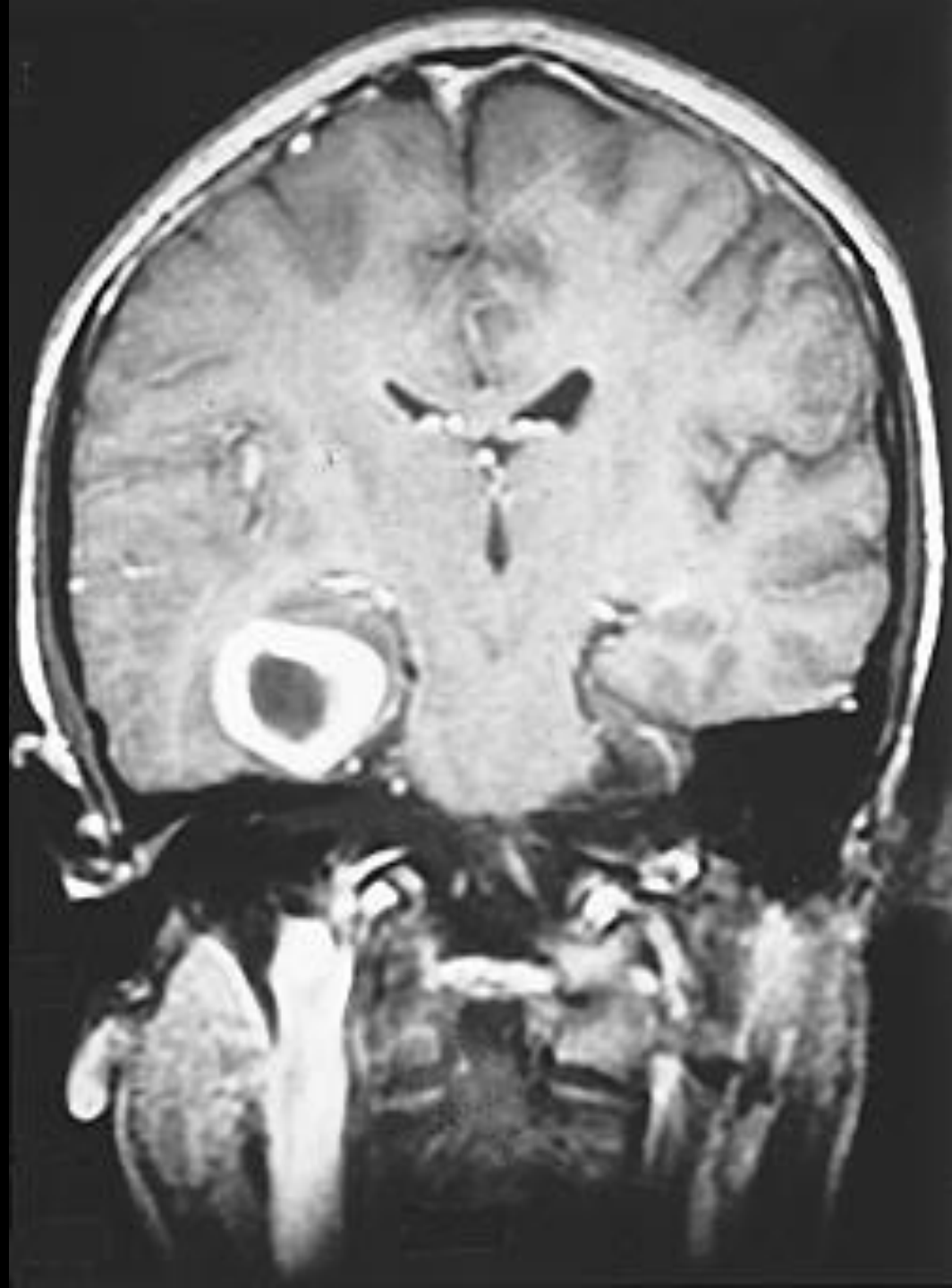


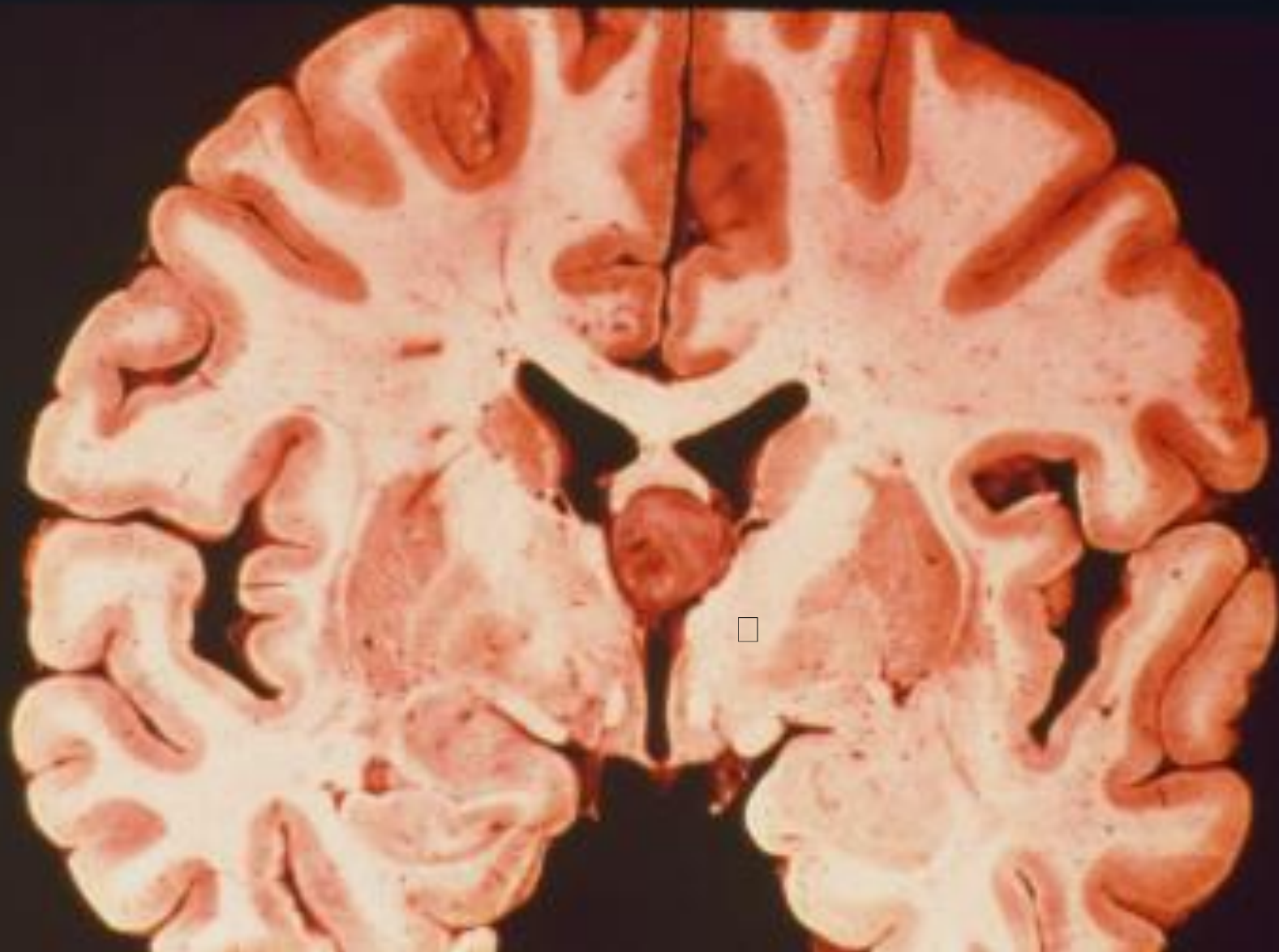
Headaches to worry about

- **S** - systemic symptoms
- **N** - neurologic symptoms/signs
- **O** - onset
- **O** - older
- **P** - papilledema/postural/positional

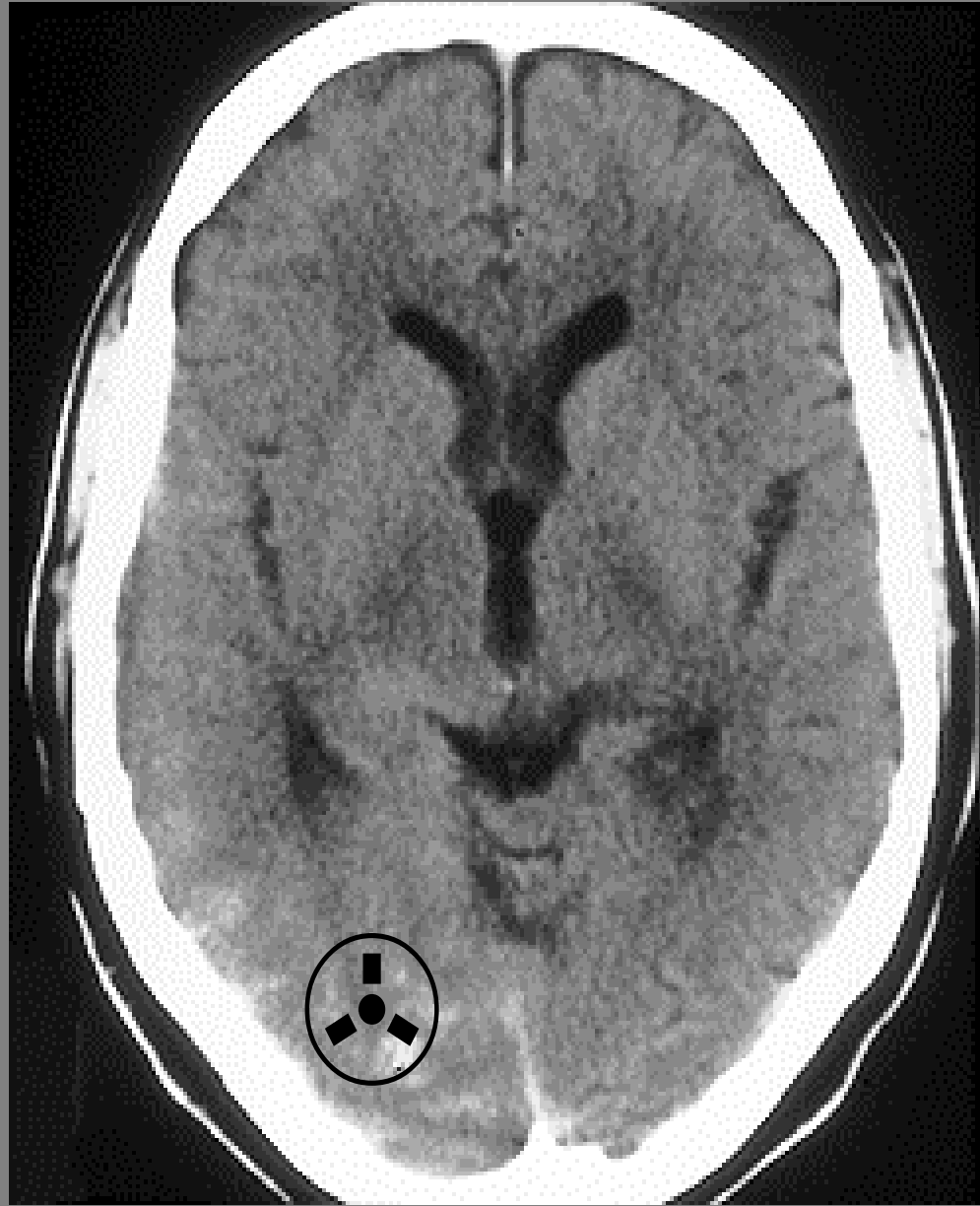


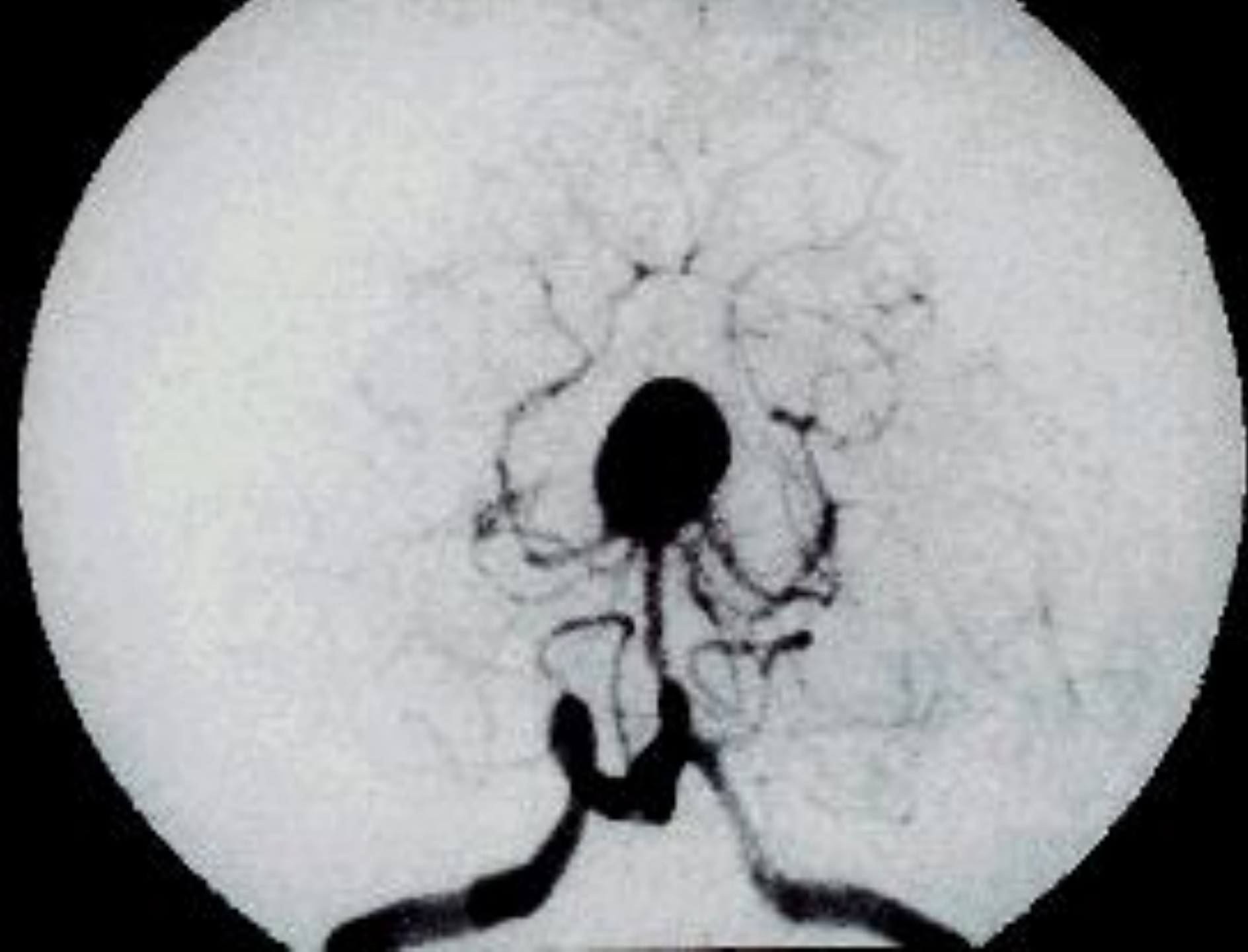






SAH

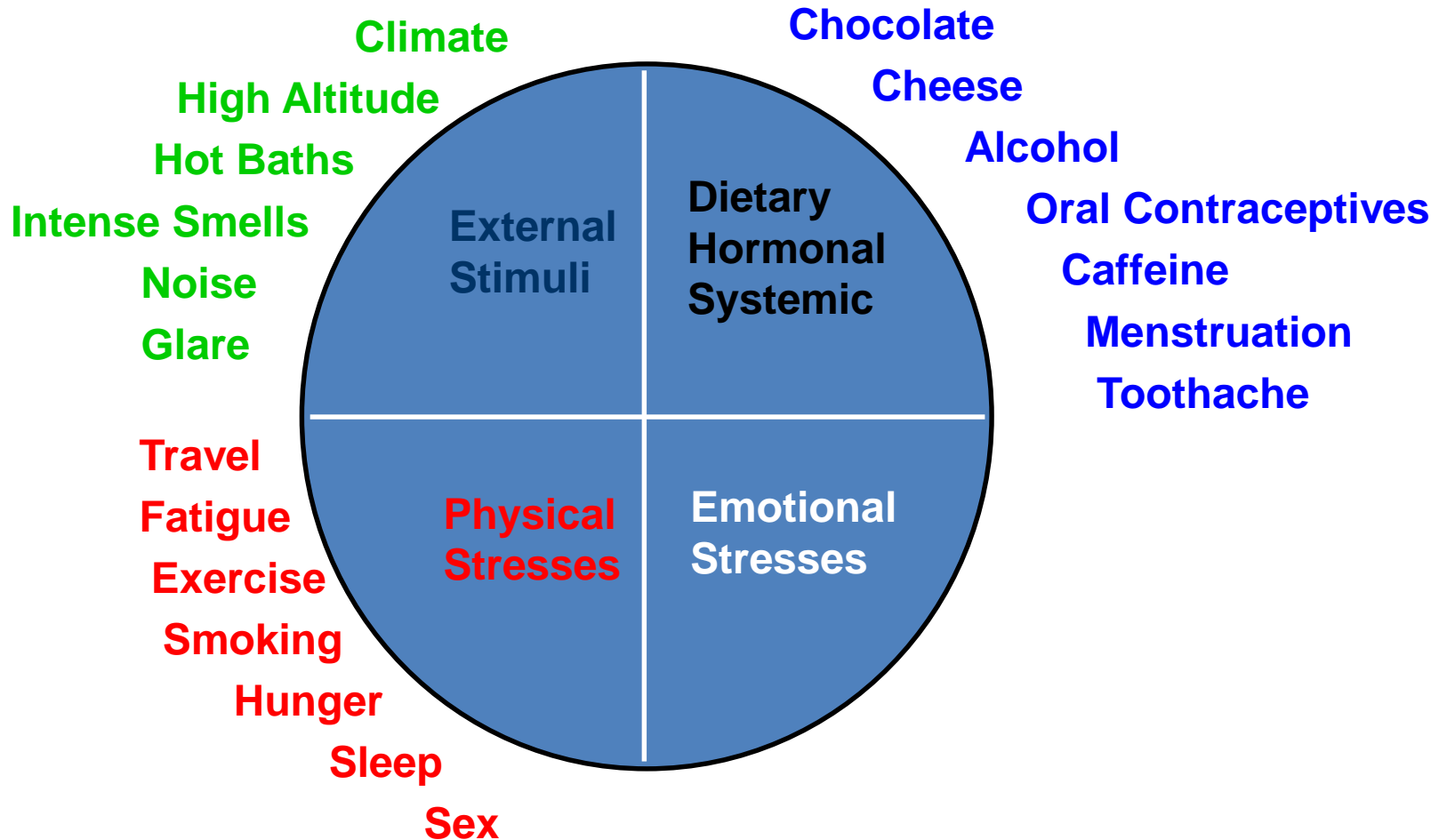




Migraine – Epidemiology

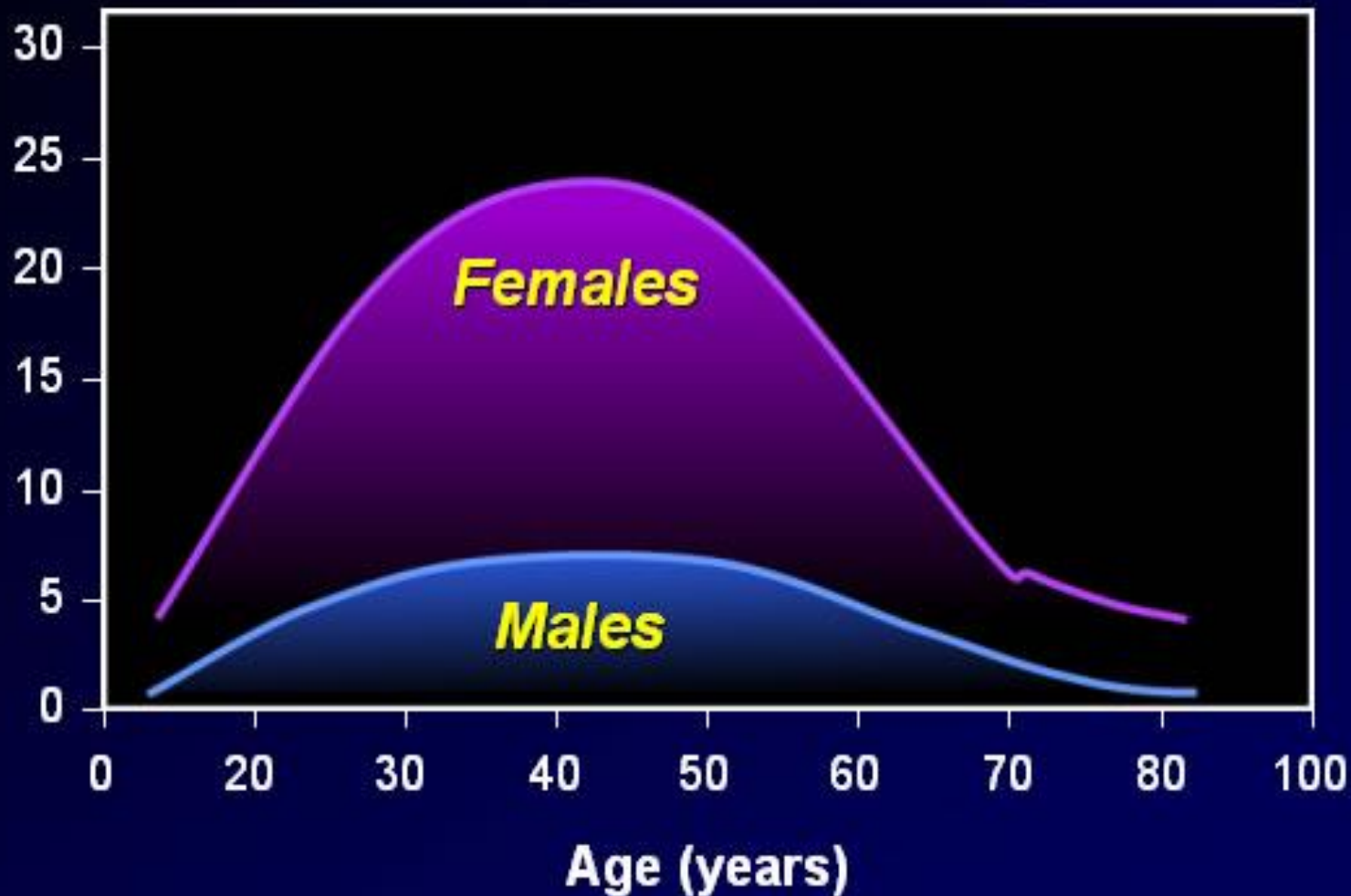
- 1 % of emergency department visits - chief complaint is headache
- Migraine prevalence: 7.8 % in males and 24.9% in females
- Significant health care costs and work related/economic losses

Migraine Trigger Factors



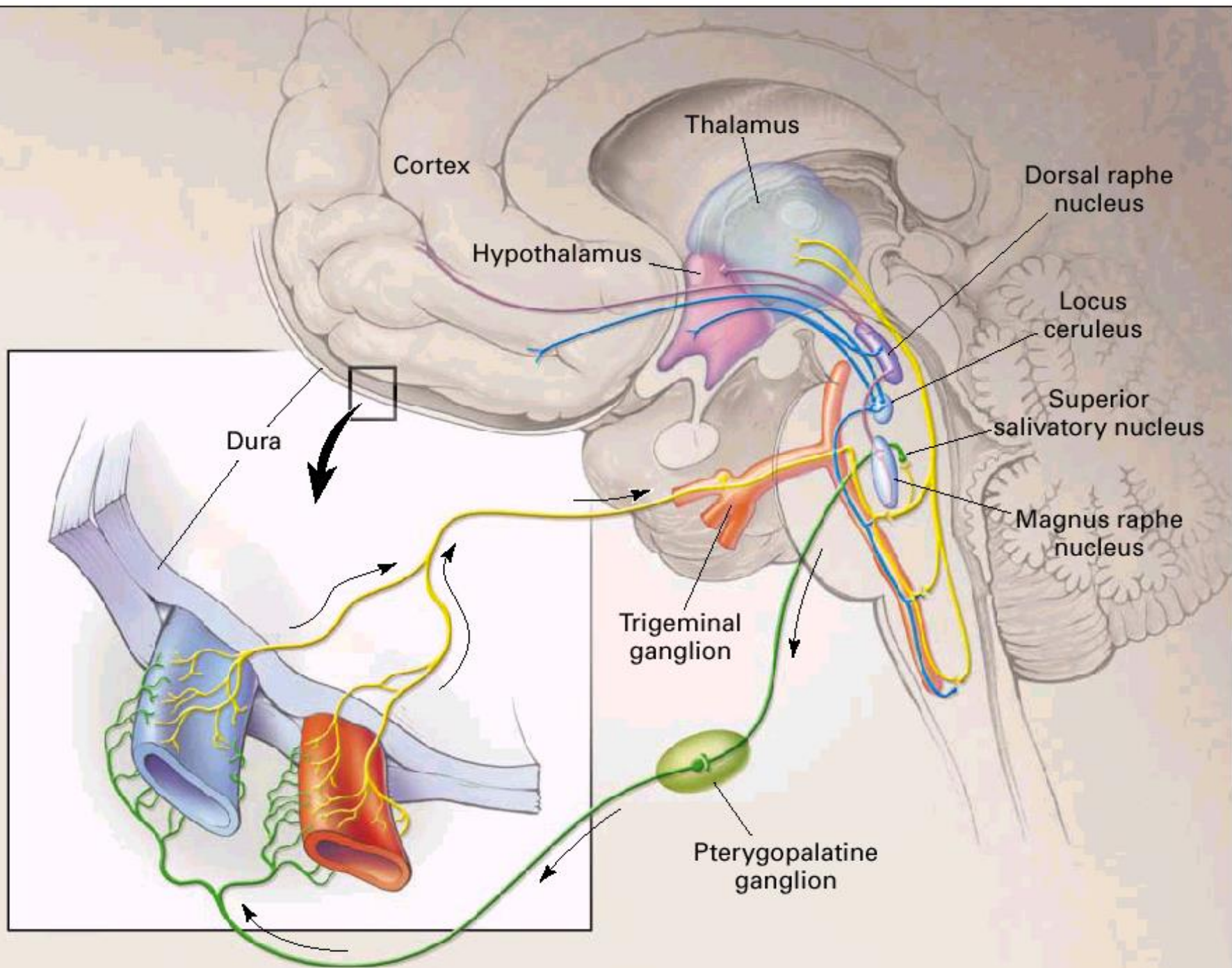
Migraine Prevalence by Age and Gender

Migraine Prevalence %



Migraine pathogenesis

- “Migraine center” within brainstem
- Triggers → cortical hyperexcitability → the aura = cortical spreading depression
- Trigeminovascular nociceptive sensitization
- Vasodilation with decrease in serotonin levels



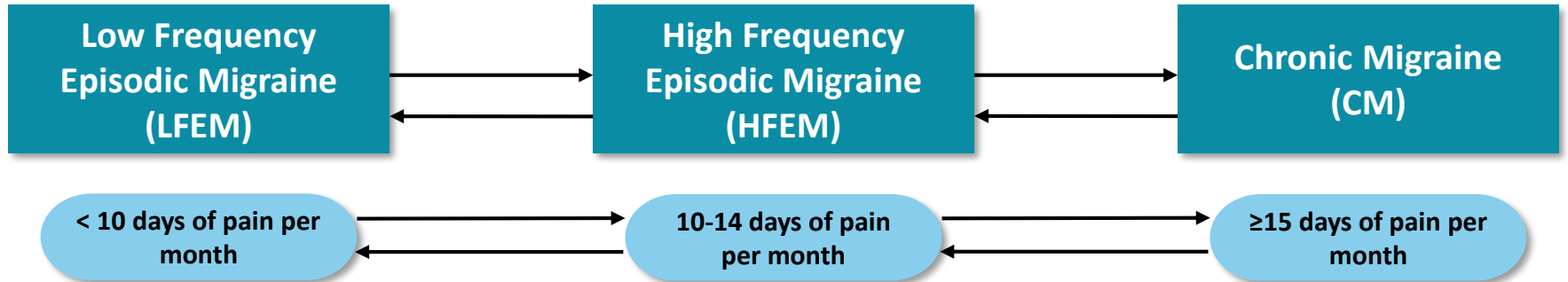
Migraine – ICHD 2: Criteria

- A history of at least 5 attacks
- Duration of 4 to 72 hours
- Character (≥ 2 of 4):
 - - Unilateral
 - - Throbbing / Pulsating
 - - Moderate to severe (inhibits daily activity)
 - - Increased with routine activity
- Associated symptoms (≥ 1):
 - - Nausea / vomiting
 - - Photophobia and phonophobia

Transformed Migraine/ Chronic Migraine

- Change in characteristics
- Some form of headache > 15 days/ month
- “Migraines and tension headaches”
- Women mid 40’s – early 50’s
- Cervical allodynia

Transformation



Risk Factors for Transformation

- Not Readily Modifiable:
 - Sex: female
 - Low education/ socioeconomic status
 - Head Injury

Risk Factors for Transformation

- Modifiable:
 - Attack Frequency
 - Central Sensitization
 - Obesity
 - Caffeine
 - Medication overuse
 - Stress

Migraine versus Sinus Headaches

- ‘Sinus headaches’ - misnomer
- Pain is often located over the sinuses
- Migraine is frequently triggered by weather changes
- Tearing and nasal congestion are common during attacks
- Sinus medication may help migraine

Concussion and Trauma

- Post-traumatic headaches
- Cervical allodynia
- Vestibular dysfunction

Hormonal Influence

- Fluctuating estrogen
- Pregnancy, perimenopause, menopause
- Combined OCP versus low dose progestin
- Smoking

Migraine Abortive Therapy

- Nonspecific

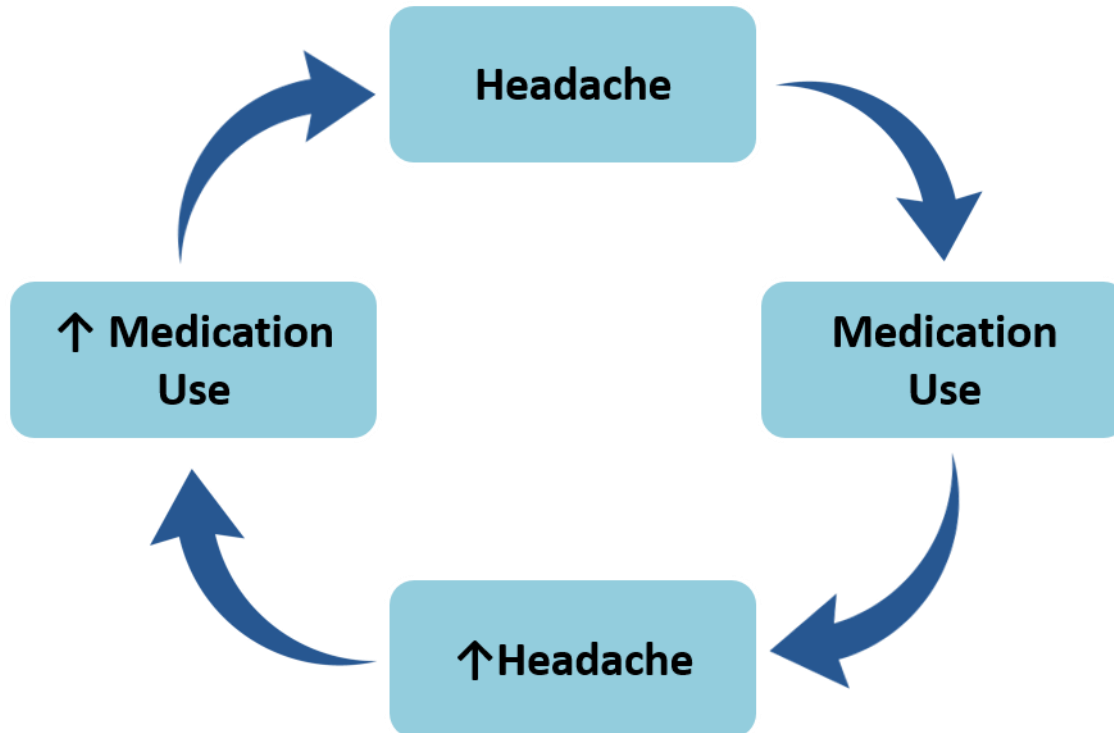
- OTC analgesics
- Prescription NSAIDs
- Combination analgesics
- Neuroleptics/anti-emetics
- Corticosteroids
- Barbituates
- Opioids

Nerve blocks

- Specific therapy

- Ergotamine/DHE
- Triptans

Medication overuse



Medication Overuse

- 1) Even when the overused medication is used for reasons other than headache, it may still be associated with the development of CDH;
- 2) Acute medication overuse induces CDH just in those biologically predisposed to it.

Migraine Preventative Treatment

- Non-pharmacological
 - Exercise/ weight loss
 - Sleep hygiene
 - Vitamins / Supplements
- Pharmacological
 - Antidepressants
 - Antihypertensives
 - Anticonvulsants

Chronic Migraine Prophylaxis

- **Medications:**

- Anticonvulsants:

- Gabapentin
 - Valproate
 - Topiramate

- Antidepressants

- Amitriptyline
 - Nortriptyline
 - Tizanidine

- Botulinum toxin (OnabotulinumtoxinA) injections

- Antihypertensives

- Propranolol
 - Flunarizine
 - Candesartan

- CGRP antagonists



A. Corrugator: 5 Units each side
 B. Procerus: 5 Units (1 site)
 C. Frontalis: 10 Units each side



D. Temporalis: 20 Units each side



E. Occipitalis: 15 Units each side



F. Cervical paraspinal: 10 Units each side
 G. Trapezius: 15 Units each side

Summary

- Migraine is highly prevalent and a major cause of disability
- Important to diagnose and identify modifiable risk factors of migraine chronification
- Ideal treatment involves a healthy balance of lifestyle, acute and preventative medications

Thank you

Pathophysiology

- abnormal excitation of peripheral nociceptive afferent fibers in the meninges
- enhanced responsiveness of trigeminal nucleus caudalis neurons
- decreased pain modulation from higher centers, PAG
- spontaneous central pain generated by activation of the “on cells” in the medulla
- decreased 5-HT levels
- central sensitization