The Bare Essentials : Headache

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Learning objectives

- Understanding common causes of headache and their management
- Recognizes red flags
- Able to answer frequently asked questions about headache

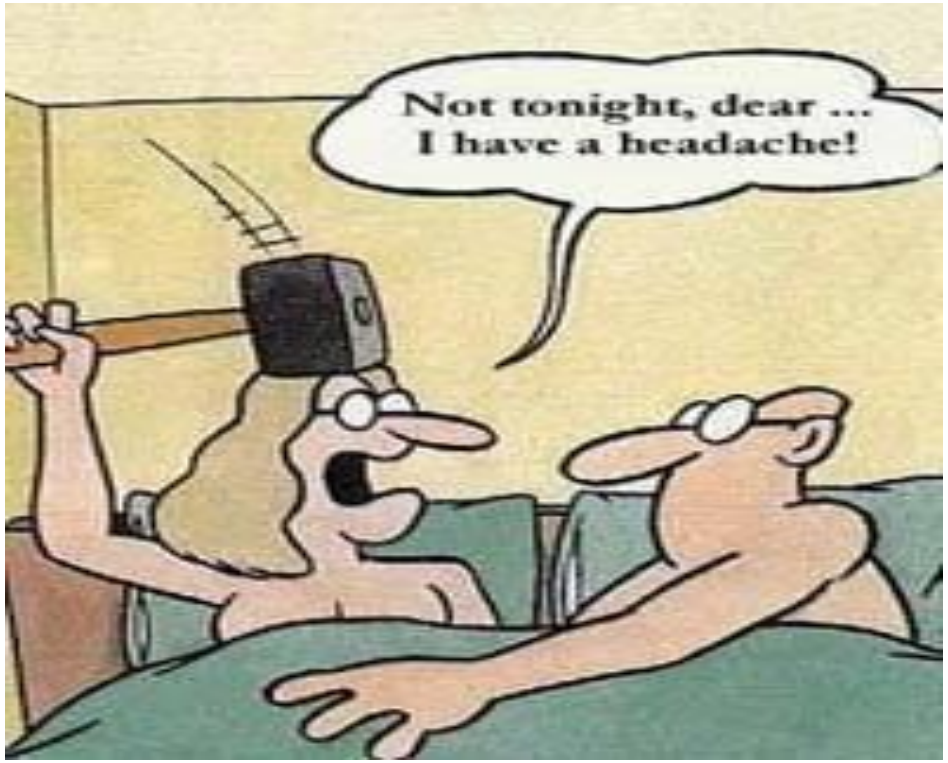
Road map

- Facts about headache
- Historical introduction
- Classification of headache
- Migraine
- Menstrual headache
- OCP and headache
- Menopause and headache
- Other headaches
- Conclusions

Facts about headache

- Headache is a symptom and not a disease – simply means a pain in your head
- Informally means a problem that is annoying or difficult to deal with .
- For a GP – Not again
- For Neurologist – A Cinderella area

For a Gynaecologist
the best contraception method



Historical introduction

Trepanation, a sign of neurosurgery, was evident on neolithitic skulls dating from 7000ac .

Trepanning was recommended by some 17th century physicians for the treatment of migraine .

The Ebers Papyrus, an ancient Egyptian prescription for headache dating back to about 1200ac

Historical introduction

- Later from Mesopotamia :

  the head is bent with pain gripping his temples and his eyes are affected with dimness and cloudiness

- Hippocrates in 400ac , described the visual aura that can precede the migraine headache and its relief by vomiting

Epidemiology

- Headache is the presenting symptom in 1-2% of emergency admission
- Patients present to the emergency with 2 types of headache
    1. "First or worst syndrome"
    2. "Last straw syndrome"
- Is one of the top 10 complaints in almost all medical specialties
- Most headaches don't represent a serious medical condition
- It has one of the longest lists of differential diagnoses in all of medicine

Epidemiology

- Headache affects 95% of people in their life
- One in 10 have Migraine
- One in 30 people have headache more often than not, for 6 months or more
- At least 90% of patients seen in a neurology outpatient clinic will have migraine , tension type headache or a chronic daily headache syndrome .
- Sinister causes of headache are rare ,0.1% of all headache in primary care .

ICHD-2 Classification

- **Part 1:**
  Primary headache disorders
- Cranial neuralgias

- **Part 2:**
  Secondary headache disorders

IHS classification: primary headaches

1988	New additions: 2004
-Migraine	-Chronic migraine
-With aura	-Typical aura without migraine
-Without aura	-Persistent aura without infrction
-Opthalmoplegic	-Abdominal migraine
-Retinal	-Cyclical vomitting
-Childhood syndromes	-New daily persistent headache
-Complications	-Hemicrania continua
-Other	
-Cluster	
-Tension-type headache	

IHS Classification: secondary headaches

2004: headaches attributable to

1. Head trauma
2. Vascular disorders
3. Non-vascular disorders
4. Substance use
5. Non-cephalic infections
6. Metabolic disorders
7. Cranium, neck, ear, eye disorders
8. Cranial neuralgias
9. Psychiatric disorders

→ Idiopathic intracranial hypertension IIIH
Sponaneous low CSF pressure

→ Medication overuse headache

→ Cericogenic headache

Headache: what a Headache

- The patient with a headache often finds himself a medical orphan.
- He is fortunate indeed if his headache is transient, for otherwise he may find him self on an excursion to the ophthalmologist, otolaryngologist , neurologist ,dentist, psychiatrist , chiropractor and the latest health spa .
- He is x rayed, fitted with glasses, analysed, massaged, relieved of his turbinates and teeth and too often emerges with his headache intact.
- R C PACKARD 1979

Questions to be answered during the consultation with a headache patients

- Can I classify this headache ?
- Do I need to investigate ?
- How can I best explain the Diagnosis ?
- What is the patient after – reassurance , explanation , treatment , brain scan , something else ?
- Is treatment appropriate and if so , what is the most sensible approach?

Evaluation

- History:
  - Onset
  - Duration
  - Frequency
  - Course
  - Character
  - Location
  - Precipitants or triggers
  - Associated symptoms – red flags – wt loss , cognitive impairment , fever
- Medications – OCP , Analgesia
- Family history
- Social history (including alcohol and drugs, sleep, eating and exercise habits) – stressors
- What the patient thinks

Evaluation

- Asking the patient to complete a headache diary documenting headaches, possible triggers, and treatment tried is often very helpful in clarifying details of the history

Headache patterns based on frequency

- **Headache on most Days**

  Pain more often than not

  - medication overuse
  - Chronic Migraine
  - hemicrania continua – strictly Unilateral
  - Chronic Cluster headache - strictly Unilateral

  Pain-free more often than not

  - Cluster headache - strictly Unilateral
  - paroxysmal hemicrania - strictly Unilateral

Headache on minority of days

- Migraine

Red Flags- SNOOP

- **S**ystemic Symptoms-fever,wt loss (HIV,Cancer)
- **N**eurologic symptoms or abn signs (confusion, altered consc)
- **O**nset: sudden , abrupt ,thunderclap headache
- **O**lder : New onset and progressive headache
- **P**revious headache history : first ,change of frequency, severity or clinical feature

Physical exam

- KEY POINTS:

  Vitals

  Fundoscopy

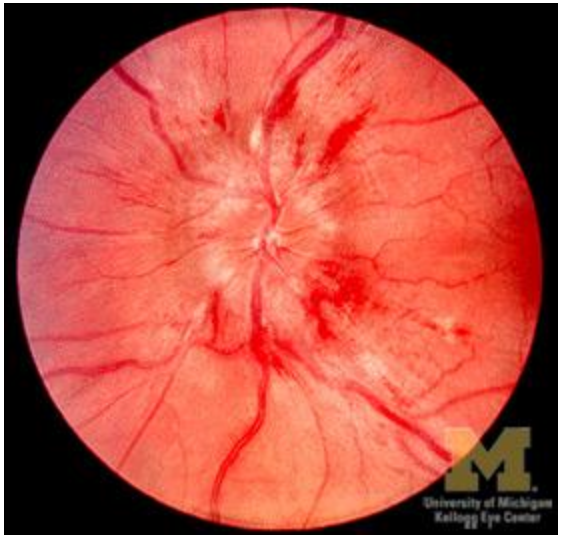
  Palpation of areas of head and neck

  Auscultation of eyes, neck

  Nuchal rigidity and meningeal signs

- Complete neurological exam-
- Dr AL-Memar 3 min Neurological exam


EYES AT SAME LEVEL
TARGET EQUIDISTANT


University of Michigan
Kellogg Eye Center

Neurodiagnostic - Indication

- First or worst headache of patient life
- Sudden onset headache
- Change in frequency and severity
- Abnormal Neurological examination
- Progressive headache
- Neurological symptoms that do not meet the criteria of migraine aura
- Focal seizures

- Do not avoid radiologic testing purely for the sake of pregnancy

PRIMARY HEADACHE SYNDROME

Migraine - Definition

"Migraine is a familial disorder characterized by recurrent attacks of headache widely variable in intensity, frequency and duration. Attacks are commonly unilateral and are usually associated with anorexia, nausea and vomiting"

-*World Federation of Neurology*

Migraine Facts

- Migraine is one of the common causes of recurrent headaches
- According to IHS, migraine constitutes 16% of primary headaches
- Migraine affects 10-20% of the general population
- More than 2/3 of migraine sufferers either have never consulted a doctor or have stopped doing so
- Migraine is under diagnosed and undertreated
- Migraine greatly affects quality of life. The WHO ranks migraine among the world's most disabling medical illnesses

Burden Of Migraine

- World - 15-20% of women and 10-15% of men suffer from migraine
- In India, 15-20% of people suffer from migraine
- Adults – Female: Male ratio is 2 : 1
- In childhood migraine, boys and girls are affected equally until puberty, when the predominance shifts to girls.

NEJM 2002; 346(4): 257-269; XI Congress of the IHS, 2004

How Many People Have Migraine?

- There are 28 million migraine sufferers age 12+ in the United States
  - 21 million women
  - 7 million men
- One in 4 households has at least 1 migraine sufferer
- Most people with migraine are 25-55 years old

- National Headache Foundation. American Migraine Study II: Migraine in the United States: Burden of Illness and Patterns of Treatment

Phases of Acute Migraine

- Prodrome
- Aura
- Headache
- Postdrom

PRODROME

- Vague premonitory symptoms that begin from 12 to 36 hours before the aura and headache

- Symptoms include
  - Yawning
  - Excitation
  - Depression
  - Lethargy
  - Craving or distaste for various foods

AURA

Aura is a warning or signal before onset of headache

Affects up to 30%

Evolving and subsiding over 5-60 min

Symptoms

- Flashing of lights
- Zigzag lines
- Difficulty in focusing
- Any neurological symptom

HEADACHE

- Headache is generally unilateral throbbing and is associated with symptoms like:
  - ✓ Anorexia
  - ✓ Nausea
  - ✓ Vomiting
  - ✓ Photophobia
  - ✓ Phonophobia
  - ✓ Tinnitus
- Duration is 4-72 hrs

POSTDROME (RESOLUTION PHASE)

Following headache, patient complains of

- Fatigue
- Depression
- Severe exhaustion
- Some patients feel unusually fresh

Duration: Few hours or up to 2 days

MIGRAINE - PATHOPHYSIOLOGY

VASCULAR THEORY

- Intracerebral blood vessel vasoconstriction – aura
- Intracranial/Extra cranial blood vessel vasodilatation – headache

SEROTONIN THEORY

- Decreased serotonin levels linked to migraine
- Specific serotonin receptors found in blood vessels of brain

PRESENT UNDERSTANDING

Neurovascular process, in which neural events result in activation of blood vessels, which in turn results in pain and further nerve activation

Migraine Triggers

- Food
- Disturbed sleep pattern
- Hormonal changes
- Drugs
- Physical exertion
- Visual stimuli
- Auditory stimuli
- Olfactory stimuli
- Weather changes
- Hunger
- Psychological factors

MIGRAINE MANAGEMENT

- **Non-pharmacological treatment**
  - Identification of triggers
  - Meditation
  - Relaxation training
  - Psychotherapy

- **Pharmacotherapy**
  - Abortive therapy
  - Preventive therapy → specific / non-specific

WHY THE NEED FOR PROPHYLAXIS ?

- Abortive drugs should not be used more than 2-3 times a week

- Long-term prophylaxis improves quality of life by reducing frequency and severity of attacks

Migraine preventive treatment

Propranalol 40-240 mg	Class A evidence
Other B blockers	Probably as effective
Sodium Valproate 800-2000	Class A evidence
Topiramate 100mg/day	Class A evidence
Gabapentin up to 1800 mg	evidence Less robust
Amitryptylin 10 mg	
Pizotofen up to 3 mg	
Methysergide uo to 12 mg	Side effect

MIGRAINE: ABORTIVE THERAPY
Non-specific treatment

Aspirin	500-650 mg	**oral**
Paracetamole	500 mg-4 g	oral
Ibuprofen	200-300 mg	oral
Diclofenac	50-100 mg	Oral/IM
Naproxen	500-750 mg	oral

Specific treatment

- Triptans
  - Sumatriptan (Imitrex®): 25 mg twice a day (rescue with 50 or 100 mg)
  - Naratriptan (Amerge®): 1mg twice a day
  - Zolmitriptan (Zomig®): 2.5 mg twice a day (rescue with 5 mg)
  - Rizatriptan (Maxalt®): 5 mg twice a day (rescue with 10 mg)
  - Almotriptan (Axert™): 6.25 mg twice a day (rescue with 12.5 mg)
  - Frovatriptan (Frova®): 2.5 mg twice a day
  - Eletriptan (Relpax®): 20 mg twice a day (rescue with 40 mg

Complications of migraine

- Medication overuse headache
- Chronic Migraine
- Status Migrainosus-attack last>72 h
- Persistent aura without infarction->1 wk
- Migrainous infarction
- Migraine triggered Seizure-Migrlepsy

Women and Migraine

- 70% of women will have worsening headaches associated with their menstrual cycle
- 60% of women will report relief from their headaches during pregnancy (may not be true)
- 40% of women will have their first migraine during pregnancy or shortly after delivery
- 70% of women have few migraines after menopause
- Many women report worsening headaches around menopause

Menarche and migraine

- The female preponderance of migraine appears at Menarche
- 5- 10% of children suffer from migraine
- Same proportion for girls and boys
- Menarche: peak incidence of migraine in girls
- Onset at menarche more frequent for migraine without aura than with aura

MIGRAINE WITHOUT AURA & MENSTRUATION

- ***PURE MENSTRUAL MIGRAINE***

  attacks fulfilling criteria for migraine without aura

  Attacks occur on day ½ of menstruation in at least 2 out of 3 menstrual cycles and no other times.

- ***MENSTRUALLY-RELATED MIGRAINE***

  attacks fulfilling criteria for migraine without aura

  Attacks occur on day ½ of menstruation in at least 2 out of 3 menstrual cycles and additionally at other times

Mechanisms of menstrual attacks

- **Menstrual attacks are related to falling levels of estrogens, at the end of a physiologic cycle, or during the pill- free interval in women taking estro-progestatives**
- **Women suffering from menstrual migraine do not have hormonal anomalies**
- **The normal fall of estrogen triggers the "migrainous brain"**
- **Menstrual migraine attacks appear more severe, and of longer duration than non-menstrual attacks**

Treatment of Menstrual Migraine:

- Treatment of women who insist on taking the Pill:
  - NSAID starting the 19th day of the Pill cycle until the 2nd day after restarting the Pill –Mefanamic acid 500mg BD/TDS
  - Estrogen patch during week of placebo 50Microgram /100/transdermal patch 3 to 4 consecutive packs

Migraine and pregnancy

- Can occur for the first time during pregnancy 5%-10%
- Pre existing migraine may worsen – First Trimester 3%-7%
- May Disappear 55%-90%
- No change

- Incidence of migraine is uncertain

- Most Reported cases have been of Migraine with aura or prolonged aura
- Often restart during post–partum period

What You Can Do

- Non-pharmacological
- Identify and eliminating relevant triggers
- Rest
- Biofeedback
- Ice/heat
- Massage- acupuncture
- Exercise

Acute Treatment

- Analgesics- Paracetamol is the drug of choice. If not effective
- Aspirin-First and second trimester

caution near term-Increases the risk of :

1- prolonged labour

2-Post-partum haemorrhage

3- Neonatal bleeding

4- Premature closure of the foetal ductus arteriosus

NSAIDs- ibuprofen up to 600/day (Not after 30 weeks)

Codeine-contraindicated

Anti emetics-Domperidone , cyclizine

Sumitryptan- First trimester

Prophylactic treatment

- Propranlal-10-20mg BD is the drug of choice.
- Stop 2-3days before delivery-Infant need monitoring for hypoglycaemia
- Amitriptyline10-25mg/day- Higher dose increase risk of limb deformity
- Sodium Valproate and Pizotifen is contraindicated
- Gabapentin has been used

Oral Contraceptives and Headache

- Older tablets often worsened headaches
- Newer pills are often more tolerable
- Estrogen replacement during placebo-days may help with menstrual migraine
- Uninterrupted pill packs up to 3 months at a time can also reduce the frequency of menstrual migraine
- Avoid triphasic pills
- Watch for changing symptoms
- Limit risk factors
- Monitor headache diary

Migraine and oral contraception

- **Is there a risk?**
- **Is there an influence on migraine course?**

Migraine and OC: is there a risk?

- **Migraine, especially with aura, and combined oral contraceptives (COCs) increase the risk of stroke**

- **The absolute risk of stroke in migraineurs remains low 17-19 per 100 000 woman- year**

- **Recommendations**
- **No contra-indication to the use of OCs in women in the absence of migraine aura or other risk factors**

- **Smoking should be stopped before starting OCs**

- **Consider other contraceptive methods in women who are at increased risk of ischaemic stroke (aura, HTA , hyperlipidaemia)**

Frequently Asked Questions From Patients

- Will my headaches be better after menopause?
- If I have headaches, can I take hormone replacement therapy (HRT)?
- If I take HRT, does it matter what dose and preparation I use?
- Can I still take triptans after menopause?

Headache and Menopause

- 70% of women lose their headaches with menopause
- Worsening of migraine during perimenopause
- No appropriate study is available to confirm these data
- No data to support an increased risk of stroke in women with any type of migraine who are using hormonal replacement therapy
- Migraine is not a contraindication for hormonal replacement therapy
- Usual indications and contraindications for hormonal replacement therapy should be applied

Influence of hormonal replacement therapy on the course of migraine

- **Taking hormonal replacement therapy moderately increases the risk of having migraine**
- **In case of worsening migraine with hormonal replacement therapy, changing the hormonal regimen may be beneficial**
- **Transdermal estradiol induce fewer attacks than oral conjugated estrogens**
- **Continuous hormonal replacement therapy induce fewer attacks than intermittent regimens**

Conclusions

- Migraine is a disabling disease, 3 times more frequent in women than men
- Migraine headaches can be triggered by a variety of things, including hormonal changes . Strong link between migraine and female hormones
- For menstrual migraine, focal use medications can be helpful
- Your headache pattern may change with menopause or pregnancy
- Many options are available for migraine relief – ask your Neurologist what's right for your patient
- Combined oral contraception should be avoided in women with migraine with aura, and smoking must be stopped
- Hormonal replacement therapy is not contraindicated in migraineurs; continuous hormonal replacement therapy with transdermal estradiol appears as the best

Tension headache

Tension headaches

- Chronic tension type headache:-

  -more than 15 days per month

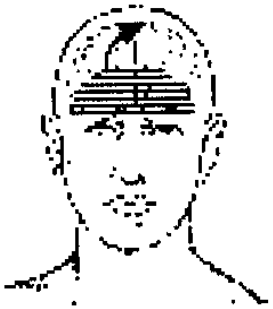
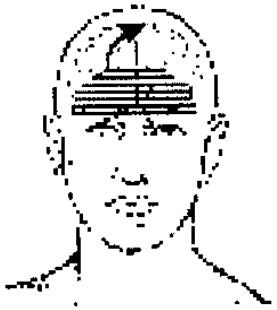
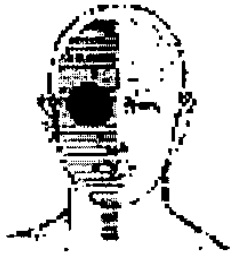
  - often daily

  -often stress/lifestyle related

Poorly localized , dull in nature

Normal neurological examination

DIFFERENTIATING COMMON PRIMARY HEADACHES

Characteristic	Migraine without aura	Tension-type headaches	Cluster
Location and radiation of pain	 Usually unilateral	 Bilateral	 Strictly unilater

Tension headaches: Do not have the associated features like nausea, vomiting, photophobia, phonophobia. The muscle contraction leads to headache. Headache quality is of a tightening (non-pulsating) quality. Usually bilateral. Intensity is mild or moderate

Cluster headaches: Severe unilateral pain. Headache associated with lacrimation, nasal congestion, rhinorrhea, facial sweating or eyelid edema. Pain lasts for 15 to 180 minutes. More common in men

Tension headache management

- Lifestyle changes ,Regular exercise
- Drug treatments-acute-aspirin 600-900mg, ibuprofen 600mg, naproxen 250-500mg, paracetamol 500mg-1g –avoid overuse
- Prophylaxis-amitriptyline, nortriptyline, SSRIs
- Accupuncture
- Clinical psychology
- Occipital nerve block or Botulinum toxin type A

Medication overuse headaches

- Affects 1 in 50 adults
- Females:males 5:1
- First noted with phenacetin/ergotamine
- More common with aspirin/ NSAIDs/paracetamol/codeine/DF118
- Can take several weeks to resolve after medication withdrawal

Medication overuse headaches-cont.

- Low doses daily carry larger risk than higher doses weekly
- Esp common if using simple analgesia more days than not per month
- Using triptans, codeine >10days per month
- Worse on awakening in the morning
- Worse after physical exertion

Medication withdrawal headache-treatment

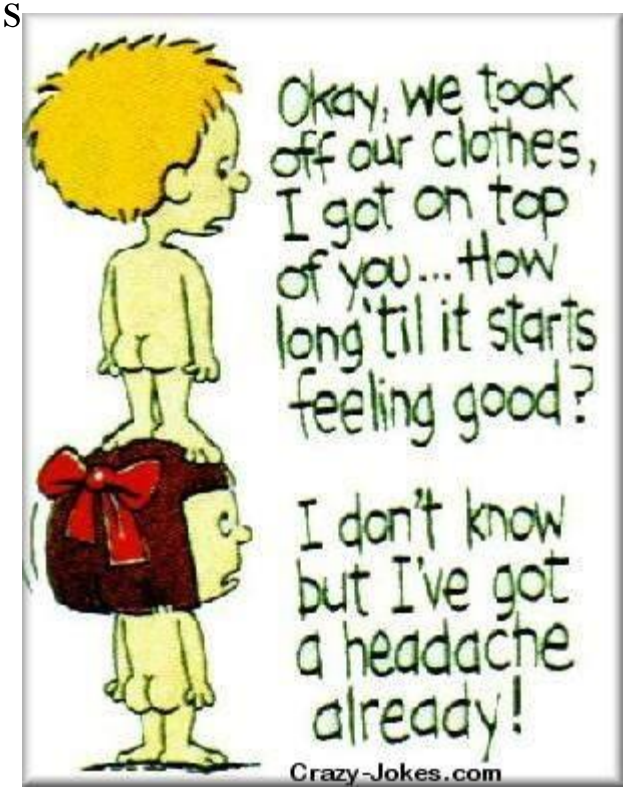
- Stage one-abrupt withdrawal most effective-symptoms will worsen in days 3-7.
- Stage 2-recovery from MOH
- Stage 3- review and assess the underlying primary headache disorder
- Stage 4- prevent relapse
- Failure to withdraw- naproxen 250mgtds/500mg bd.

Primary headache associated with Sexual activity

- Pre orgasmic-evolve as the act progress

  Similar to Tension headache

  orgasmic – Mimic SAH



Conclusions

- Most headaches are due to Primary headache Syndrome
- Most patients who reach a neurologist have either Migraine or Chronic daily headache .
- Patients want an adequate hearing of their symptoms followed by a diagnosis and understandable explanation .
- Some headache syndromes are amenable to medical treatment (e.g migraine), but others are much less so (chronic daily headache) and an honest explanation is usually appreciated .
- Above all patients want someone who is interested in their headache and who will listen to their story.

No one is immune !