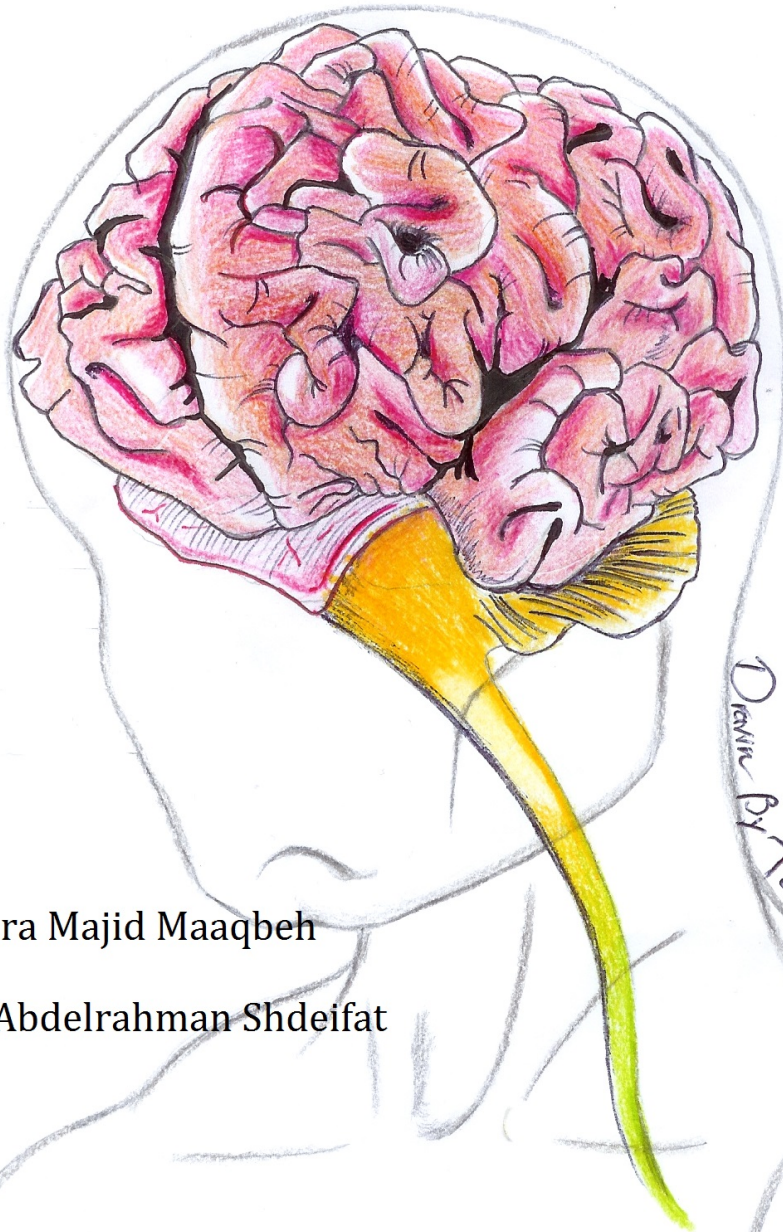


CENTRAL NERVOUS SYSTEM

- Handout
- Sheet
- Slide

- Anatomy
- Physiology
- Pathology
- Biochemistry
- Microbiology
- Pharmacology
- PBL



Drawn By Tariq Bushraaq...

Done By: Bushra Majid Maaqbeh

Dr. Name: Dr. Abdelrahman Shdeifat

Lec #: 1



Headache

Headache is one of the most common presenting symptoms in general practitioner clinic. It comes in the **third** place after upper respiratory tract symptoms (the first) and lower back pain (the second). Headache sometimes can be the **second** most common presentation.

Headache is a pain in the head. It could be related to any anatomical structure *inside* or *outside* the cranium.

As doctors, you should use your knowledge and experience to give a good diagnosis with least losses (time & cost). You should help your patients and make them comfortable, you should not ask for too many *unnecessary* tests/investigations. Taking history and doing a proper physical examination will help you conclude a professional diagnosis that is very close to the real accurate one with minimal cost and time.

A 50 year old female presented to you with headache, what are the things that you should ask about while taking the history of the patient?

1- Duration/ acuteness of symptoms

It is important in analysis and differential diagnosis to determine whether the headache is acute or chronic. *Acute* headache is usually *serious* and *dangerous* while we can wait for the chronic headache. Chronic headache needs symptom management without further evaluation.

E.g. A woman complaining of a headache that comes and goes for 2 years is less serious than a person who suffers from a sudden severe headache with *decreased level of consciousness*.



2- Nature

E.g. is it pulsating/throbbing pain or band-like pain? You also ask about the site of the headache. The nature of the headache gives us hints about the diagnosis.

3- Aggravating factors & Relieving factors

Migraine is one of the most common primary headaches we are facing in our life. It is more common in young/middle-aged females. 30% of cases are familial (correction note: Wikipedia says about two-thirds of cases run in families, and other websites say up to 80%). **Chocolate** and **cheese** (contains tyramine) are triggers of migraine attacks. Other precipitating factors: Stress, **light** (photophobia), **noise** (photophobia), female hormones, sleep deprivation, smoking and caffeine containing drinks. You do not ask for a CT brain or MRI for a person with migraine.

4- Associated symptoms

Like *vomiting*, **decreased level of consciousness** (this indicates internal pathology), *dizziness* (a vague symptom), **visual symptoms** (migraine & cluster headaches are associated with blurry vision but the pattern of blurring of vision is different between primary and secondary. When there is some loss of vision, this indicates a neurological deficit and there is an underlying pathology- secondary headache. When blurry vision occurs and then returns back to normal, it is most probably a migraine), *hypertension* (in hypertensive patients, headache is related to hypertension- secondary headache). *Toothache* and *sinusitis* may cause headache.

-Any headache associated with **neurological deficit**, like cranial nerve deficits (e.g. facial nerve palsy), weakness, numbness or paresthesia is a **serious** headache because it indicates serious underlying pathology.



And this (neurological deficit) needs further investigation, the most important investigation to rule out a space occupying lesion is **CT scan**, you either confirm or exclude the space occupying lesion. If you suspect anything in a CT scan, you should go to a further advanced investigation, **MRI**, which gives more resolution.

-You should ask about family history, social history, history of trauma, etc.

-If the CT brain is normal, you send your patient to neurology. If it is abnormal, you send them to neurosurgery.

PATHOPHYSIOLOGY

Stretching and irritation of ***pain sensitive structures*** inside or outside the cranium. What are those pain sensitive structures? Dura matter, Vessels and Periosteum.

-Some hormones, over activity of sympathetic or parasympathetic (like in cluster headache) may play a role in the pathophysiology of headache. No definite known mechanism for these yet, they are accumulative with multiple factors.

-They found that trigeminal nerve may be involved in the pathophysiology of migraine. You may do ablation or suctioning to decrease the attacks of migraine but this is rare. (Correction note: The pain of migraine occurs when excited brain cells trigger the trigeminal nerve to release chemicals that irritate and cause swelling of blood vessels on the surface of the brain. These swollen blood vessels send pain signals to the brainstem.)

-In pediatric age group, one of the most common causes of headache is refraction errors.



TYPES OF HEADACHE

1- Primary headache

There is NO underlying pathology/disease. Common Types of primary headache: cluster headache, tension-type (band-like) headache and migraine.

2- Secondary headache

It is caused by an underlying pathology/disease, like tumors, infections (abscess), bleeding (hematoma), inflammatory process or head injury.

-Each type needs different type of management. *Fortunately*, **primary headache is more common** than the secondary, because the secondary is more serious due to space occupying lesions. 20% of headaches are secondary.

-Secondary headaches most likely need surgical intervention.

GUIDELINES to determine the severity of a headache:

Duration, tractability to medication (how many pills of paracetamol), and disturbance of life activity & sleep. Also the degree of association with other symptoms, like loss of vision, decreased level of consciousness increases the severity.

For example, a person who had had a continuous headache for 12 hours, disturbing his sleep, not responding even after taking 7 pills of Panadol → this is a severe headache.



MANAGEMENT

Analgesia: we have three levels of analgesia, you should not start with strong analgesia for headache, and you should use the proper level according to the severity and duration of a headache.

Avoiding the triggers of headache; most cases are conservatively managed. Avoid the stress.

Treat the underlying cause: like toothache, sinusitis, overthinking, etc.

The doctor emphasizes that you should rely on **clinical based diagnosis** rather than investigation based. It is important to take the history and physically and neurologically examine the patient and do not do unnecessary investigations.

THE END

This sheet is dedicated to all my friends

Good luck :)