

CNS DISEASES

(Headache)

primary Headache →

1 Migraine

- onset: 30-120 min duration: <24 H, symptom-free location: unilateral [Face, neck]
- A-S: Aura - Nausea - vomiting - photophobia - phonophobia.
- Stabbing Headache is common - primary (idiopathic) causing Headache
- Have polygenic influence

2 Cluster H.

- onset: rapid duration: 30-120 min, 1-4 attacks per day, lasts m → w
- pain Location: orbital / retro-orbital, same side during cluster, switch sides between clusters. AS: orbital [conjunctival injection - ptosis - miosis - tearing], nasal stuffness - agitation ↓
- wake pt up from sleep! pt is pacing around the room in agitated state, head banging.

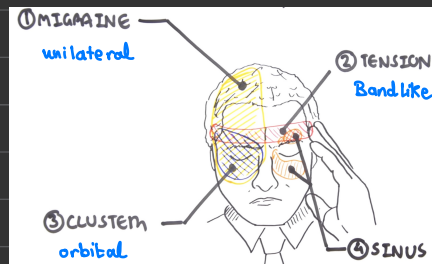
3 Stabbing H.

- onset: Abrupt, rarely from sleep pain Location: Anywhere over head
- duration: brief, seconds or less
- common in migraineurs.

4 Tension type H.

5 Cough, Sex,
exertional H.

6 thunderclap H.



Secondary Headache →

- 1 **Meningitis**
 - onset: 1-2 days, abrupt duration: days-weeks pain location: global
 - * Neck stiffness AS: Fever - meningism - rash - false localising signs - signs of raised intracranial pressure
 - Kernig's sign [extended Leg] - altered mental state.



Meningism → in meningitis + subarachnoid haemorrhage + UTI + pneumonia.

- 2 **Subarachnoid Haemorrhage**
 - onset: Abrupt, immediately, rare for sleep duration: Fatal, days → weeks
 - pain location: Anywhere, poor localisation AS: 20% isolated Headache only, Nausea, vomiting, ↓ consciousness, false localising sign, III Nerve palsy.
 - Secondary Headache → life threatening
 - Meningism → neck stiffness / Kernig's sign



- 3 **Temporal Arteritis**
 - onset: gradual, temple pain + scalp tenderness duration: Continuous
 - pain location: temple + scalp AS: Jaw pain on chewing, visual symptoms, tender temporal arteries, ↑ erythrocyte sedimentation rate + C reactive protein
 - usually >55 years, unwell, life threatening (secondary)

(Disturbances of consciousness)

- 1 **TLOC**
 - Most common cause is syncope (↓ cerebral perfusion) [vasovagal or cardiac]
 - TLOC on standing → postural hypotension - drugs (anti hypertensive - levodopa) - Autonomic neuropathies, >65 yrs, hypovolemia, DM pts.

[No alarm - HCM - AS - Arrhythmia] ←

2

vasovagal syncope

- Last for 1-2 min, may associated with Myoclonic jerks
- Cause: Stimulation of parasympathetic system by (pain-illness-emotion) in pt standing in warm environment and (vasodilation - bradycardia)
- Features: Light headedness, vision dimming, Nausea, tinnitus, pale grey skin

(epileptic seizures)

1

tonic-clonic seizure

- tonic phase Loc with body stiffening, stereotyped pattern
- clonic phase rhythmic jerking crescendo and subsiding over 1/2 to 2 min
- postical phase unresponsiveness, confusion, sleep, deeply breath
- Causes: drugs - alcohol - sleep, Features: Flushed / cyanosed, lateral tongue biting, Headache, shoulder fracture / dislocation, back pain, myalgia.

2

Focal seizure

- focal motor seizure: arising from motor cortex / frontal lobe
- temporal lobe seizure: temporal lobe, autonomic / psychic symptoms
lip smacking or swallowing

3

pseudoseizure

- How to distinguish from epileptic seizure? Frequency: more duration: longer
Multiple time in day, waxing and waning.
asynchronous movement, pelvic thrust, side to side movement (rather than Flexion - extension)
- Absence of postical confusion!

4

Exercise related syncope

- suggest cardiac cause

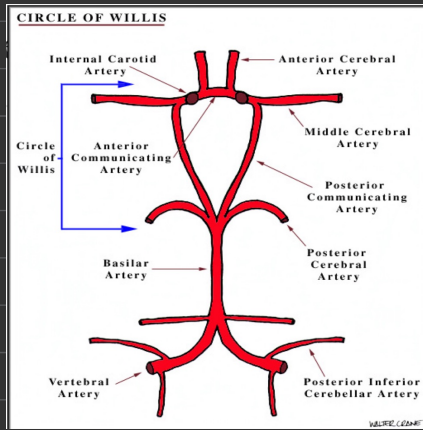
(stroke)

Strokes

- 80% ischemic , 20% Haemorrhagic
 - Haemorrhagic → using Anticoagulant , Headache , vomiting , seizures , ↓ Conscious
- ↑ in asian population

Spinal strokes are rare → Abrupt bilateral paralysis

The anterior spinal artery syndrome → MC , Loss of motor function + pain and temp. sens. , sparing of joint position and vibration sens.



1 TACS

2 PACS

3 POCS

4 Lacunar S.

Total anterior circulation syndrome

- ① hemiparesis unilateral
weakness (and/or sensation) → face, leg, arm
- ② hemianopia unilateral
vision loss
- ③ higher cortical deficit disphasia -
visuospatial, lacc

partial anterior circulation syndrome

- ① 2 or 3 of TACS
- ② isolated higher cortical deficit
- ③ motor/sens. deficit more restricted than LACS

Posterior Circulation Syndrome

- ① ipsilateral cranial nerve palsy + contralateral motor / sensory deficit
- ② Bilateral mot./sens deficit
- ③ conjugate eye movement
- ④ cerebellar dysfunction
- ⑤ Homonymous visual defect

- ① pure motor
- ② pure sensory
- ③ pure sensorimotor
- ④ ataxic hemiparesis

All > 2 or 3 of face, leg, arm.

(Dizziness - vertigo)

30% of >65 yrs

illusion of movement types:

Causes: postural hypotension -
cerebrovascular d - cardiac arrhythmia -
hyper ventilation (Anxiety - panic)

- ① peripheral (vestibular apparatus): BPPV - Menier disease - vestibular neuritis
- ② Central (Brain): migrainous vertigo - Stroke - Multiple sclerosis

BPPV

- vertigo lasts for few seconds
- ↑ with sleeping on affected side or move.

Meniere's d.

- vertigo lasts for mins → hrs
- hearing loss, tinnitus, Nausea + vomiting

migrainous

- vertigo lasts for mins or hrs.

Multiple sclerosis

- Visual loss (optic neuritis)
- numbness
- polygenic influence

vestibular neuritis

- Sudden onset, last days, VRT symptoms.

(Functional / psycho / hysterical / Somat / conversion Disorder)

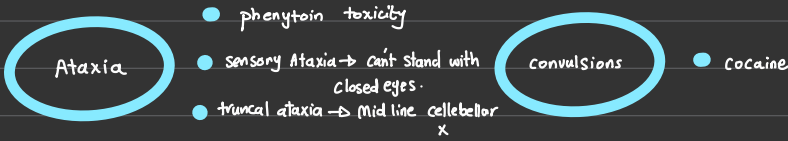
- Not true Neurological disorder
- Features : general : Fatigue - pain - Anxiety - Lethargy - Mood disorders
attacks : weakness - tremor - collapsing
eyes : Blindness

More :

cerebral vein thrombosis

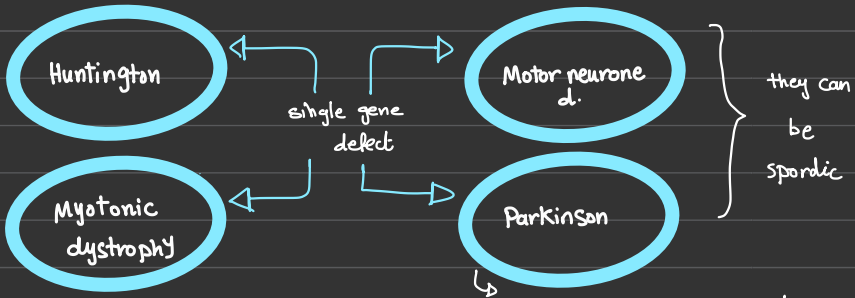
Isolated headache + truly abrupt onset

(DRUG Hx)



(FAMILY Hx)

- ① Autosomal recessive parental consanguinity
- ② single gene defect →
- ③ polygenic influence. Multiple sclerosis + Migraine.



- Manganese cause it
- dysarthria, dysphonia, monotonous voice
- pill rolling tremor, cog wheeling
- rigidity of muscle tone (lead pipe)
- glabellar tap reflex +



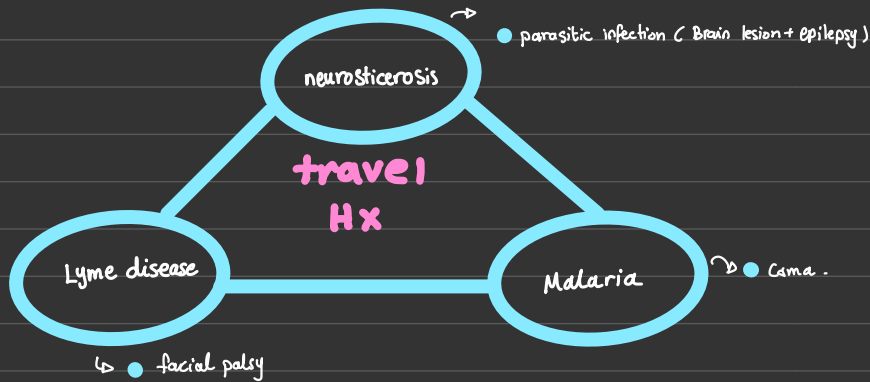
(social - occupational Hx)

Alcoholism → vit. Deficiency

↳ lead exposure → Motor Neuropathy

degenerative spinal cord → vegetarians - Nitrous oxide inhalation → vit B12 deficiency.

Smoking → vascular / malignant disease



More:

- Myasthenia gravis**
 - Fatiguing speech
- Bulbar palsy**
 - Weakness
 - → tongue difficulty with liquid sounds
 - → palat nasal quality to speech
- pseudobulbar palsy**
 - contracted, spastic tongue
- Myokymia**
 - rapid bursts of repetitive motor unit activity in eyelid or first dorsal interossei.
- Gierstmann syndrome**
 - dyscalculia + dysgraphia + finger agnosia + inability to distinguish left from right
- Cerebellar dysarthria**
 - slow, slurred [as alcohol intoxication]
- Tremors**
 - Fine: Anxiety, Hyperthyroidism, Bagomist
 - essential: AD inheritance, Head and VL [sym], Alcohol → improve it
 - parkinson: worse at rest, VL (asym)
 - Cerebellar damage: ↑ at movement, finger to nose test
 - Functional tremor: inconsistent

* Bovine cough: inability to abduct one of the vocal cords

Lesions	
UMN	LMN
Clonus	ms wasting
spasticity	hypotonia
Hyperreflexia	absent /
Babinski sign	reduced reflex
Pseudo bulbar palsy	Bulbar palsy.

Nervous System Examination

General Look: Facial expression, speech, posture, General behaviour.

Level of Consciousness: awake? Brain Stem, aware? Cerebellar Cortex + Glasgow Scale



Meningeal signs: 1. Neck stiffness 2. Kernig's Sign 3. Brudzinkski sign



Speech examination: 1. volume - rhythm - clarity 2. Lalala → lingual, bababa → labial, sisli → tongue twister.

Count to 30 → fatigue, Cough + Ah → Bilateral soft palate rising. **Speech abnormalities**: 1. dysphonia: ↓ volume, Laryngeal disorder.

2. dysarthria: Slurred speech, articulation problem. 3. dysphasia: Language problems (talking - understanding - reading - writing)

a. expressive (motor) b. receptive (sensory) c. conduction d. global e. dyslexia f. dyscalculia g. dysgraphia.

Stance: stand on narrow base while eyes open (cerebellar function) closed (proprioception) → Romberg sign.

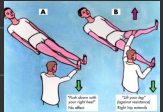
and **gait**: 1. walk 2. walk on tip toes 3. walk on heels 4. tandem walk.

Motor system: ① inspection and palpation Muscle wasting (LMNL), hypertrophy, fasciculations, Myoclonic jerks, tremors, dystonia (twisting, repetitive move), chorea (arms), Athetosis (writhing), Ballism (violent flinging move), tics (stereotyped move)

② Muscle tone upper limb, Activation, Lower limb, Ankle clonus (<6 → physiological), spasticity vs rigidity

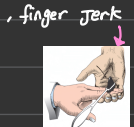
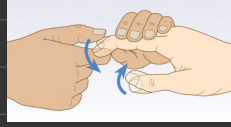
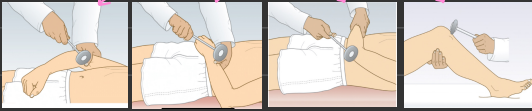
③ Power upper limb, lower limb, trunk strength, pronator drift (UMNL), Hoover's sign, paralysis.

④ reflexes Reinforcement (if no response) → UL (clench teeth, make fist), LL (interlock fingers)



Deep tendon: biceps, Brachio radialis, triceps, Knee, ankle

Hoffman's Jerk



Superficial reflexes: abdominal reflex (T8-T12), cremasteric reflex (L1-L2) only in men, plantar response (S1-S2) Babinski reflex

primitive reflexes: Grasp, palmomental, Glabellar tap, Snout reflex



⑤ **Coordination** UL [Finger nose test - Rapid alternating move - Rebound], LL [Heel to shin test], apraxia

Sensory System 1. Light touch (cotton) 2. superficial pain 3. temp. 4. vibration (Sternum - tip of big toe / middle finger)

5. joint position sense (Big toe / middle finger) 6. stereogenesis (familiar object) 7. graphaesthesia (write on palm)

① Anatomy proprio and vibration (large, fast, post-column, ipsilateral), pain & temp (slow, small, spinothalamic, contra-lateral)

② symptoms table →

③ modalities peripheral Nerve, dorsal root, spinal cord, Intra cranial

median, ulnar, radial, Common peroneal, lateral caudaneous nerve.



Paraesthesia	Tingling, or pins and needles Spontaneous or provoked Not unduly unpleasant or painful
Dysaesthesia	Unpleasant paraesthesia
Hypoesthesia	Reduced sensation to a normal stimulus
Anaesthesia	Numbness or loss of sensation
Hyperaesthesia	Increased sensitivity to a stimulus
Allodynia	Painful sensation resulting from a non-painful stimulus
Hyperalgesia	Increased sensitivity to a painful stimulus