CNS

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- Headache (occipital Region) Fever, nausea vomiting
- Neck stiffness / Rigidity
- Skin RASH

MEninGitis

1. A 20 year Female with 1 week Hx of vague ill health Feverish Feeling and Slowness in mood 3 days ago she started having Global Headache more in occipital region with Photophobia nausea, vomiting Anorexia and gradual Deterioration of conciousness No FurthER inFormation. is available From Family. Pts is weak and irritable. on Command She moves all 4 limbs but could not Flex her limb neck and complaint of severe pain Planters are equivocal bilaterally. There is no rash on body.

2. A 22 year old is brought in emergency with persistant nausea, Projectile vomiting high Grade Fever and pain in neck For last 2 days. Pts was Fine before this 2 day illness. He has very low oral intake because of nausea vomiting and takes oral sips of water only occasionally. o/E he is Febrile with Axillary Temp. 103° Pulse 104/minter. He is drowsy i. Communicate briefly. No papilloedema or other cervical cranial nerve Deficit. There is no pain on Flexion of neck. His skin is erythmatous maculopapular rash. Kerning's Sign is positive.

Diagnosis : Meningitis

What 2 important physical sign you will try to Elicit :

① KErning's Sign : Flex the hip at 98 Degree & Try to Extend Leg at Kenee.

② Brudzinki Sign : Knee and hip Flexion when attempt neck Flexion

D/Ds :

Bacterial meningitis
Viral meningitis
Tuberculous meningitis
Subarachnoid Hemorrhage
Brain Abcess / Tumor
Encephalitis

Causes :

① Bacterial

Neonates : < 1 month	Pre-School 1 m – 6 year	OLDER child & Adults > 15 year
① Gram -ve bacilli (E. coli, Proteus) most common 50-60%	① H. influenza (m.c.) 40-60%	① Strep. pneumoniae 30-50%
② Group B streptococci 20-40%	② N. meningitides (25-40%)	② N. meningitides
③ Listeria monocytogenes	③ Strep. Pneumonia	③ Staph. Aureus
	④ M. Tuberculosis	④ H. influenza

investigations :

① Lumbar Puncture : CSF Examination
② CBC : neutrophils, Lymphocytes
③ Blood culture : +ve
④ PT, aptt
⑤ RFTs : serum urea, creatinine :, Electrolytes
⑥ X-ray chest
⑦ CT-scan brain : If mass suspected.

Which investigation is most crucial. Give sample.

CSF Examination

CSF parameters:

	Acute Bacterial meningitis	viral meningitis	Tuberculosis meningitis
Pressure 9-18cm H_2O	increased	Normal	increased
Appearance	Cloudy	clear	Cloudy
white cell count 0-4 <5 cells/mm^3	1000-20,000	10-2000	50-5000
Differential count	neutrophils	Lymphocytes	mixed
Glucose 50-75 mg/dl	Decrease markedly	normal	Decrease
Protein 15-45 mg/dl	↑	↑	↑↑
Gram Stain	+ve culture	-ve	• zn-stain +ve • -ve

management:

(i) General measures

Bed Rest

I/V Fluids → Prevent Dehydration

Airway patency

(ii) Emperical Therapy

Ceftriaxone 2gm I/V Bid

vancomycin 1gm I/V bid

Ampicillin 2gm I/V 4-6 hourly > 50 years

Steroid → Dexa : Decadrone 10mg I/V 6 hourly

(iii) Adjuvant Therapy

Mannitol 250 mg I/V bolus (control ICP)

Dexa

Diazepam 10mg (control seizerus)

Ischemic Stroke

1. A 65 year male with complaints of Right sided weakness and speech difficulty for 1 hour. He is known Diabetic & HTN for 10 years. He was fine when he collapsed suddenly and family rushed him to hospital. No significant Hx of Headache or vomiting etc. Since then he is not moving his R arm and leg. O/E his pulse 90bpm is irregularly irregular He is Afebrile with BP 160/90 mmHg. He is not talking and does not understand any spoken command. He has Right hemipresis with power Grade 2/5 normal Deep Tendon Reflex and +ve babiniski sign on Right.

2. A 72 year old man who is known case of long standing DM & HTN with variable control of both. He presents with Right sided weakness. It was sudden in onset & unable to stand and walk. He can take orally. O/E he is Afebrile & Pulse is irregularly irregular. Power Grade is 2/5 and mildly DysArthric.

3. A 65 year know DM & HTN. Her son give Hx of Fall From chair while she was sitting. And unable to move her Left side of body. She was unable to talk. She tried to do but unsuccesful. motor weaknes with power of 1/5 on left & 5/5 on Right side. Her plantars are up going on left and equivocal on Right side.

Diagnosis : Ischemic Stroke / cerebral infarction

Risk Factors:

modifiable	non-modifiable
DM	Age
Hypertension	Gender male > Female
Alcohol	Hereditry
Smoking	Previous MI, Stroke
Heart Diseases (HF, AF, MI)	High Fibrinogen
Oral Contraceptives	
+ve Family History	

Investigations:

(i) Risk Factor Analysis

CBC

Blood sugar

Blood Cholestrol

ANA & Anti DNA : SLE

ESR & Serum protein Electrophoresis

Protein C, S & Anti-Thrombin III

(ii) Neuroimaging

MRI : (more sensitive) - Detect stroke in Brain stem

CT : Distinguish hemorrhagic from ischemic stroke

(iii) Vascular:

Duplex US : Extracranial AD

Doppler US

MR Angiography

CT Angiography

(iv) **Cardiac**

ECG

Echocardiography

management :

General :

- Maintenance OF ABC
- Nursing care
- Maintenance OF Fluid & nutrition : I/v Fluid & Pass NG
- pass catheter
- Enema in constipation
- Care of skin & Eyes : Prevent bedsore Give antibiotic
- Control Temperate
- Passive movements
- vitals monitoring

Specific :

Thrombolytics : TPA I/w within 3 hours (start immediety) rule out hemorrhage

Antiplatelets : Aspirin , clopidegral -

Anticoagulant : Heparin

Dexa / mannitol : control cerebral edema

control BP :

Anticonvulsants / Anti-Depressants : Depression or Anxiety

* internal carotid endarterectomy
  Subcutaneous Angioplasty
  ] IF stenosis >70%
* Embolization :

Briefly Describe motor & Sensory Aphasia /

motor → Cannot write Properly

Sensory → Cannot Speak Properly

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SubArachnoid Hemorrhage

1. A 40 year male presents with sudden onset of headache For last 6 hour. He collapsed briefly at onset of Headache with no definite fit. later he having severe headache with repeated vomiting. He describe it has worst headache of his Life nape of neck. O/E his pulse 98/min, BP 140. He was lying with eyes closed and had ve neck stiffness no other neurological deficit no significant past medical Hx.

2. Mr. x known case of VHD and taking oral Anticoagulant For past 3 month. He Fell from motor cycle 2 days back with injury to the Right eye and Transient loss of Conciousness. He developed Gradual loss of consciousness since last night. O/E he has deeply hemorrhage and Pupil Dilated of the Right eye. He has Generalized hypotonia with Extensor Plantar Reflex on Left side.

Diagnosis : Sub-Arachnoid Hemorrhage

Causes :

MCQs
- Saccular (Berry) Aneurysm (85%)
- Av malformation
- Trauma
- idiopathic
- Anticoagulant
- Bleeding Disorders
- Brain Tumor

investigations

- Lumbar Puncture : (investigation of choice)
- CSF Examination
- CT
- Cerebral Angiography → optimal approach to prevent recurrent Bleeding

management

- immediate support measures
  - Control BP
  - Dexamethasone to control cerebral edema
- Surgical Clipping of Aneurysm : CHECK : reduce → Recurrance
- AV malformation : Surgical Removal
  - Ligation of vessels
- Prevent vasospasm : Nimodipine
- Burr-hole Drainage of Hematoma

PARKINSONISM

A 78 year old Female Pts was brought to out Pts clinic with complaints of jerky movements of hands, difficulty in holding things with both hands, difficulty in walking occasionally Fall on walking fast so has started taking very short steps. Her son said she is Gradually becoming slow in her movement. last week she went to take her Pension. She was unable to sign the documents as signature were very much different From her origional ones due to jerky movement of hand.

Diagnosis : Parkinsonism : It is a Chronic & Clinical progressive syndrome Due to Lesion in Basal Ganglia Characterized by

- Tremors
- muscle Rigidity
- Hypokinesis

Group of Disorder Alter Dopaminergic pathway.

Causes

Depletion OF Dopaminergic neurons in substantia nigra

Trauma

Encephalitis

CVA

Post MSH

investigations

Clinicaly Diagnosis , NO Diagnostic Test Perfoom

CT & MRI to Exclude wilson Disease.

management :

MEDical :

Levodopa - Carbidopa (mainstay of Rx)

Dopamine Receptor Agonists : Bromocriptine

Anticholinergic

Selegilline

Combt Rx inhibitors : (Entacapone, Telcapone)

Amantadine

Physiotherapy

Speech Therapy

Surgical :

① Stereotactic thalamotomy

② implantation of stimulating electrodes into Globus Pallidus

while doing her Detail neurological Examination which physical signs you would specifically look for.

① Tremors of Hands & Fingers

② Gaits

② Speech

④ loss of smell

⑤ Dizzines (Faint upon standing)

Mysthenia Gravis

A 23 year old male presented with 4 month Hx of Generalized weakness and inability to perform his daily activities. He feel better in the morning but these complaints aggravated in evening when he usually have drooping of eyelids. he also feel more weakness of limbs if have to continue some working for more than 10 min. Duration. this improves after taking rest.

Diagnosis : mysthenia Gravis

DIDs :

Lambert - Eaten mysthenia syndrome

Hyperthyroidism

intracranial mass Lesion

Name one Differential Diagnosis and how will you Differentiate it from main Diagnosis.

Lambert - Eaten mysthenia Syndrome

This Syndrome is Differentiated by the Fact that

- Tendon Reflex Depressed / Absent
- Autonomic changes show incrimental response

Dry mouth

impotence

nerve stimulation Test

in mysthenia Gravis these changes are normal.

investigations :

Tensilon Test : 2mg inj. of endorphonium action in 30min for 2-3

Anti-acetylcholine Receptor Antibody : IGg Antibody in 80%

Anti-skeletal muscle Antibody (Anti-musk)

Nerve stimulation

CHEST

X-ray / CT / MRI → Detect Thymoma

EMG

Screening for associated autoimmune Disorders

- Thyroid Disease
- RA Factor
- ANA

management

Oral Anticholinergic : Pyridostigmine → inhibit enzyme Cholinesterase

Thymomectomy : Antibodies tve pts under 45 yeare Disease from 7 year

immunosuppressants : Azithioprine

Steroid : Prednisolone

I/v immunoglobulin

Plasma Exchange

MigraiNE HEadacHe

1. A 34 year old Female presents with headache Fos 6year It is episodic moderate to severe unilateral Generalized. Headac lasting for 1-3 days. During headache attack she prefer rest in a dark, quite room. She may vomit or goes to sleep and feel relieved. She get 3-4 attack in month. Her mother used to have similar headache. She is married with 3 kids. Youngest kid is 7 year old. She denied any sleep Disturbance or Family Problems. O/E She is obese with no papilloedema.

2. A 29 year is seen For off and on headache For 3 year The headache is at variable sites but usually left Temple Forehead and adjacent part of head. It is preceded by strange Feeling light headednes and nausea, vomiting. it is moderate – severe intensity and almost every week staying For a day or more. Routine oral medicine For headache do not work For her. O/E CNS is normal Her BP & vision normal

Diagnosis : Migraine headache

TyEES :

Classical migraine

Common migraine

Hemiplegic migraine

Basilar migraine

D/Ds :

Meningitis

SAH

Hemiplegic migraine differentiated from TIA

investigations

management

(i) General measures:

Reassurance

Relief of Anxiety

Avoidance of precipitating Factors

Stop Contraceptive pills

(ii) Specific measures:

Acute / Abortive medications : preventive

① Pain Relivers

Aspirin (Disprin 300mg) 2-3 Tab.

Paracetamol (calpol 500mg) 2 Tab

② Triptans (sumatriptan "imigrane")

③ Ergotamine Tartrate (migril)
↳ in cronary Artery Disease

④ NSAIDs

⑤ Anti-emetic

① β- Blockers

② Ca^{2+} channel Blocker verapamil

③ Antideprassants

④ Antiepileptic

⑤ SSRIs

Combination:

Triptans + naproxen

MCQs
Cluster Headache
Prophylaxis
↓
Migril
Ergotamine Tartarate

SALMAN MANZOOR

Epilepsy

1. A 17 year Female having Fits for last 4 year. She Fall suddenly with Generalised jerking of limbs, lasting 2-4 min. After she regain her conciousness, she is completely unaware of episode. There is Hx of Tongue bite and urinary incontinence during Attack sometimes on Detailed inquiry there is no significant Hx of Head injury miningitis. She had been use verapamil but take it irregularly. She was also taken to spiritual healers and quacks but not relieved. last Episode of her illness wast just 2 day ago. otherwise she has these attacks once / Twice in month.

Diagnosis: Grand Mal Epilesy (Generalized Tonic-clonic seizures)

How will you investigate this patient:

① **Confirm the Diagnosis:**

EEG:

Ambulatory EEG / Standard

SLEEP EEG

② **Cause of Epilepsy:**

Structural Lesion

- CT-Scan
- MRI

Metabolic Disorders

urea, Electrolyte, Blood sugar

LFTs, Ca^{2+}, Mg^{2+}

Infective Disorders

CBC, ESR, CRP

Chest X-ray → HIV, Syphilis

CSF Examination

Give the Treatment option with doses and special consideration if any :

immediate medical care :

① Ensure airway is clear

② Give O_2 to offset cerebral hypoxia

③ Give IV Anticonvulsant: (diazepam. 10mg) only when Convulsant are continous or repeated

④ Take Blood for Anticonvulsant Level

⑤ Rx of underlying condition

Anti-Epileptic Drugs :

Type of	Drugs	Dose
① Partial Seizerus	Carbamazepine → 1st line	400 – 1600 mg
	Lamotrigine	100 – 300 mg
	Sodium valproate	500 – 2500 mg
	Phenytoin	200 – 400 mg
② Tonic-clonic seizerus	Na valproate] 1st line	
	Lamotrigine	
	Carbamazepine	
③ Absence Seizerus	Ethosuximide → 1st line	500 – 1500 mg
	Na valproate	
	Lamotrigene	
④ Myoclonic	Na valproate	

A known Epileptic Girl of 19 year presented with recurrent Tonic - Clonic Generalized Fits over last one month. She was not taking any medicine and no detailed record of her illness was available.

What medicine will you prescribe:

Na valproate

Lamotrigene

Carbamezipine

Investigation to confirm Diagnosis:

EEG

CT-scan

MRI

If Fits is not controlled with initial Rx what other option

Start → IV Diazepam 10 mg

Repeat once only after 15 min

↓

After 30 minutes if Sezirus continue

IV Phenytoin 1 g

↓

If continue After 30-60 minutes

IV phenobarbitol , ICU Admit , EEG

↓

If Seizerus After 60 minutes

General Anesthesia (propofol)

instructions to patient Attendant : 4 most important

① Stay with the person and keep safe person

② move person away From Danger (Fire, water)

③ Ensure airway is clear

④ Do not insert anything in the mouth

⑤ Person may be drowsy & confused dont Left alone the person

Multiple Sclerosis

A 21 year old lady presented in outdoor clinic with **spastic paresis** for 3 days. Her past Hx was significant for **transient loss of vision** 4 month back which settled after Treatment. O/E Reflexes were brisk and plantar were up going. **Heel knee shin Test is +ve.**

Diagnosis : Multiple Sclerosis

investigations :

① **CSF Examination**

Total protein is normal but the Level of **IgG is ↑** (MCQs)

② 2 or mor Oligoclonic band are Found

MRI (Gold standard)

management :

① **Acute Excerberation :** High Dose of Steroid (IV)

② **Disease modifying agent :**

Beta interferone

Copolymer 1

Methotrexate, cyclophosphamide

Treatment of Complication

Spasticity → Physiotherapy

Baclofen + Dentrolene

Ataxia → Isoniazed

Clonazepam

Painful urinary incontinence → Anticholinergic

constipation → Laxative

Fecal incontinence → High Fiber diet.