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CENTRAL NERVOUS SYSTEM

INTRODUCTION

1. Name
2. Age
3. Sex
4. Handedness
5. Resident of
6. Education
7. Occupation
8. Informant
9. Reliability

CHIEF COMPLAINTS

1. Xxxxxx – Onset and course
2. Yyyyyy – onset and course
3. Zzzzzzz – onset and course

H/O PRESENT ILLNESS

1. LOC/Seizure
    a. Onset
    b. Activity at the time of incident
    c. Preceded by
        i. Chest pain/Palpitationsweating/nausea/ vomiting/
        ii. headache/giddiness/presyncope/visual disturbance.
    d. Associated with
        i. Involuntary movt/Tonic/clonic/focal/generalized

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ii. Rolling up of eyes/stare/tongue bite/grunting noise
iii. Sphincter incontinence/abnormal breathing pattern

e. Lasted for (Duration)
f. Recovered after – Spont/treatment
g. Post recovery – drowsiness/confusion/weakness
h. Number of episodes
i. Sensorium in between episodes
j. Last episode
k. Any injury sustained.

2. Disorientation
   a. To T/P/P
   b. Episodic or continuous
   c. Orientation between the episodes
   d. Any abnormal behavior
   e. Recovery

3. Speech disturbance
   a. Onset
   b. Comprehension
   c. Any spontaneous speech/word outflow
   d. Slurring
   e. Reading/writing/repetition
   f. Progression
   g. Any stress during speaking
   h. Tightness/looseness in tongue
   i. Paraphasias

4. Cranial Nerves
   I. Smell to commonly used items

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soap/shampoo/toothpaste

II. Decreased visual acuity
Color vision
Color desaturation
Scotoma/Field defect

III. IV and VI
i. Double vision
1. Monoocular/binocular
2. On primary gaze or evoked gaze
3. Horiontal/vertical
4. Disappears by (Closing eye)
ii. Pain in eyes on movements
iii. Ptosis – Fatiguability/diurnal variation
iv. Features of Horners syndrome

IV. Same as above

V. Decreased/abnormal sensations over face, difficulty in mastication.

VI. Same as above

VII. Deviation of angle of mouth
Facial asymmetry
Drooling of saliva
Difficulty in closing eyes
Difficulty in speaking
Taste impairment

VIII. Hearing impairement
Giddiness
Vertigo
Tinnitus
H/O CSOM

IX. And X
Dysphagia – solid/liquid/both

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Dysphonia
Dysarthria
Nasal regurgitation
Hoarseness of voice/Nasal twang

X. Same as above

XI. Neck movements
Shrugging of shoulders

XII. Ability to make the bolus of food
Ability to maneuver the food bolus inside the mouth
Tongue deviation
Dysarthria

5. Motor

a. Weakness (UMN)

i. Reaching overhead objects/taking comb to the head
ii. Lifting a bucket of water/breaking the chapaties
iii. Holding a glass of water/writing task in detail
iv. Holding the pen/grasping the comb
v. Difficulty in getting up from a chair/squatting position
vi. Climbing up/down the stairs/gripping the chappals
vii. Chappals slips away with/without the knowledge
viii. Getting up from lying down position/Turns in the bed
ix. Lifting the head off the bed
x. Breathlessness/ptosis/facial weakness/chewing

b. Dexterity

i. Buttoning/unbuttoning the shirt/ Breaking the chapaties
ii. Tie the nada of payjama/shoe lace
iii. Negotiating the foot into the chappal
iv. Also ask about

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1. Proximal/distal
2. Symmetrical/asymmetrical
3. Spasticity/wasting – which is more?
4. Onset and progression of the weakness
5. Present status.

c. Weakness (LMN)
   i. Looseness/fasciculations/wasting
   ii. Which is earlier – weakness or wasting
   iii. Proximal/distal
   iv. Symmetrical/asymmetrical
   v. Periodicity/diurnal variation, fatiguability
   vi. Selectivity of muscles
   vii. Onset/course/progression

d. Cerebellar
   i. Smearing of face/target oriented activities
   ii. Tremors/Gait/Speech/Vertigo/Looseness of limbs
   iii. Difficulty in reaching the objects
   iv. Incoordination during picking up water/during drinking.

e. EPS
   i. Tremors at rest/Stiffness/expressionless face
   ii. Bradykinesia – during bath/dressing etc.
   iii. Sleep/Memory/Handwriting/Hypophonia/Gait
   iv. Difficulty in walking narrow paths (Pedestrian strip)

f. Gait
   i. Broad based/Narrow base
   ii. Speed/Antalgic gait/Freezing/Parkinsons gait features
   iii. Recurrent falls/Buckling……/Climbing up/down
   iv. Difficulty in walking in dark/Pain while walking
   v. Stiffness/crossing of legs

6. Sensory
   a. Onset/progression/present status

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b. Posterior column
   i. Unable to feel clothes over the body
   ii. Difficulty in walking in the dark/wash basin (Sink) sign
   iii. Slipping of slippers without knowledge
   iv. Cotton wool sensations over the feet
   v. Band like sensation/Encasement of limbs
   vi. Pins and needles/numbness/tingling/paraesthesias
   vii. Lhermittes phenomenon/water flowing underneath the feet
c. Spinothalamic
   i. Hot and cold water during bath
   ii. Burning/shooting/pricking pain
   iii. Funicular pain/sensory level
   iv. Root pain is a sharp shooting pain in a particular n dermatomal pattern which increases on coughing/sneezing. It is recurrent and more severe.
d. Cortical sensations
   i. Ability to feel the coins in the pocket
   ii. Feel wallet in the pocket

7. Autonomic
   a. Bladder
      i. Urgency/urge incontinence/frequency/hesitancy
      ii. Precipitancy/Retention (Painful/less & aware/unaware)
      iii. Overflow incontinence/incomplete evacuation
      iv. Dribbling of urine/loss of social inhibition
      v. Postural giddiness/presyncope/erectile dysfunction
   b. Bowel – Frequency/consistency/continence
   c. Faintness/palpitations
   d. Abnormal sweating/Decreased lacrimation
   e. Horners syndrome
   f. Gastroparesis/nausea/vomiting/diarrhea

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ETIOLOGICAL HISTORY

1. Headache (Mnemonic – OLD CAARTS)
    a. Onset/location/duration/diurnal variation/Ch…….
    b. Associated with(Nausea/vomiting/photophobia/ phonophobia/ abnormal behavior/LOC/blurring of vision
    c. Red flag signs
    d. Preceded by aura
    e. Aggravated by/relieved by/timing/severity/
    f. Frequency (No of episodes in a day)/abnormal sweating
    g. Pain anywhere in the body
2. Injury/RTA/Trauma to the neck
3. Abnormal behavior/nausea/vomiting
4. Fever/chest pain/palpitations/cough/ dyspnea/hemoptysis
5. Bowel symptoms/Jaundice
6. Oliguria/dysuria/hematuria/high colored urine
7. Joint pain/rash/photosensitivity/oral ulcers /hair fall/seizures
8. Dog bite/animal bite/vaccination/injection
9. Alternative drugs/well water drinking/insecticides exposure
10. Carrying weight in head for long/neck pain for long
11. Skin lesions/Nodules
12. Hypo/hyper thyroidism symptoms
13. Blood transfusion

PAST HISTORY

1. DM/TB/HTN/Hansens/CAD/BA

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2. Similar illness in the past
3. Animal bite/vaccination/injection in the past
4. Blood transfusion/jaundice
5. Major surgery

PERSONAL HISTORY

1. Veg/Non veg/Well water drinking/food habits
2. Smoking/Tobacco/Alcohol/Substance abuse
3. Marriage/Children
4. High Risk behavior

MENSTRUAL HISTORY

1. Menarche/Cycles/Menopause
2. LMP/Post menopausal bleed
3. any surgery

OCCUPATIONAL HISTORY

1. Nature/duration/intensity of exposure
2. H/O exposure to dye/paint/glasswares/med eqpts/jwellery
3. Plumbing/farming/insecticides
4. Vibrating eqpts/repeated trauma

FAMILY HISTORY

1. Pedigree charting of possible genetic disease
2. h/O similar illness in the family

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TREATMENT HISTORY

SUMMARY at the end of history and four tier diagnosis

1. Functional
2. Physiological
3. Anatomical
4. Etioloical 1, 2, 3, 4……

GENERAL EXAMINATION

1. Conscious/oriented/cooperative/comfortably lying……..
2. Ht/Wt/BMI/Arm length/upper segment/lower segment/neck:ht ratio.
3. Pulse
   Rate/rhythm/volume/character/peripheral pulses/R-R & R-F
   Delay/pulse deficit/vessel wall/carotid bruit/shudder
4. BP
   mm Hg/Rt Arm supine/No significant postural fall
5. RR – rate/rhythm/type
6. P/I/C/C/L/E/JVP
7. Neurocutaneous markers
8. Nerve thickening
9. Vitamin deficiencies
10. Xanthoma/xanthelasma/arcus senilis
11. Congenital anomalies – arms/foot/chest/gums/teeth/hair change
12. acanthoma nigricans/scars/sinus
13. Features of hypo/hyper thyroidism
14. acromegaly/marfans features
15. Angioma/cutaneous angiomata/rash/petechiae/purpurae/ecchym.
16. Bed sores/genital ulcers
17. Peripheral stigmata of TB/HIV

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SYSTEMIC EXAMINATION

1. CVS

a. Apical Impulse/chest wall symmetry/anomalies
b. S1/S2/S3/S4/murmur/pericardial rub/knock

2. RS

a. Chest wall symmetry
b. Air entry/Breath sounds/adventitious sounds/pleural rub

3. P/A

a. Distended/all quadrants moves equally with the respiration
b. Soft/Non tender/organomegaly/free fluid/bowel sounds
c. Hernial sites/peripheral signs of liver failure

CNS EXAMINATION

1. HMF

a. consciousness
b. oriented to T/P/P
c. Registration
d. attention/calculation
e. Recall
f. Language-Speech (Mnemonic – CNS R3)
    i. Comprehension
    ii. Naming
    iii. Spontaneous speed
    iv. Reading
    v. Writing
    vi. Repetition
g. Language – Dysarthria
    i. UMN/Pseudobulbar – “British constitution”
    ii. Bulbar – Pa Ta Ka
    iii. Cerebellar – Rashtrapaty Amritsar se Hyderabad gaye

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Ask to repeat "Yellow Lorry".

iv. Tongue muscles fasciculations/flaccidity.

v. NMJ – Fatiguability/Nasal voice.

2. Cranial Nerves

I - Coffe powder/soap/shampoo/tooth paste

II - Acuity/Color/field/pupils/RAPD/Fundus.

III/IV & VI

- Position of the eye at primary gaze
- Conjugate eye movements
  a. convergence/divergence/saccades/pursuits
- Individual eye movements
- Nystagmus

V

- Facial sensations touch/pain/temp/vibration
- Muscles of mastication- clench the teeth
- Movements of mandible
- Corneal reflex
- Jaw reflex

VII

- Wrinkling of forehead
- Frowning of eyebrows/eyelid closure
- Bells phenomenon/facial expression/nasolabial fold
- Angle of mouth deviation/buccinators
- Taste sensation ant 2/3rd – sugar/vinegar/salt
- Parotid swelling/tenderness
- Herpes zoster in EAM

VIII

- Rinnes/webers/ABC/Ear examination

IX & X

- Uvular position
- On saying "AH" uvula/palatal/post phar. wall movement
- Gag reflex

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- Taste on post 1/3rd of tongue
- Dysphonia/dysphagia testing (?????)

XI

- Shrugging of shoulders
- Left/right turn of neck (SCM)

XII

- Tongue position in resting state/on protrusion
- Flaccidity/fasciculations/tremors/spasticity
- Myotonia/movements/Deviation of tongue

3. Motor system examination

a. Position/attitude of limbs

b. Bulk (wasting/hypertrophy)

c. Tone

i. Spasticity – clasp knife
ii. Rigidity – cog wheel/lead pipe
iii. Flaccidity
iv. Fasciculations

d. Power

i. Shoulder – Abduction/adduction/flexion/extension (5/5)
ii. Elbow – Flexion/extension (5/5)
iii. Wrist – Dorsiflexion/Palmar flexion (5/5)
iv. Hand grip – Percentage (25/50/75), Myotonia (+/-)
v. Individual muscles of hand – Normal or weak.
vi. -------
vii. Hip - Abduction/adduction/flexion/extension (5/5)
viii. Knee - Flexion/extension (5/5)
ix. Ankle – Dorsiflexion/Plantar flexion (5/5)
x. EDP muscle wasting – Present/not
xi. Truncal weakness – Percentage (25/50/75)
xii. Neck muscle weakness - Percentage (25/50/75)
(Flexion/extension/lateral flexion)

e. DTR

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i. Biceps/triceps/supinator/knee/ankle
ii. Clonus (+/-)
iii. Myotonia (+/-)
iv. Pseudomyotonic reflex

f. Superficial Reflexes
i. Plantar
ii. Abdominal
iii. Cremastric
iv. Perianal reflex

g. Whartenburg sign
h. Koffman sign
j. Release reflexes
i. palmo mental
ii. Glabellar tap
iii. Rooting reflex
iv. Suckling reflex
v. Grasping reflex
k. Coordination – UL/LL

4. Sensory System Examination
a. Superficial sensations
i. First test pin prick sensation
ii. Touch
b. Deep sensations
i. Pain
ii. Temperature – Cold (Tuning fork) and warm
c. Combined
i. Vibration
- Forehead/Mastoid/Sternum/Vertebral spine
- Clavicle/Elbow/wrist
- ASIS/PSIS/Tibial tuberosity/ankle

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ii Joint position
- Great toe/index finger

d. Cortical sensations
I all the peripheral sensations are intact, then, check for cortical sensations.

e. Lhermittes phenomenon
f. Rhombergs sign
g. determine pattern of sensory loss
i. Symmetrical/asymmetrical
ii. Glove stocking/Patchy
iii. Root level

5. Cerebellum

a. Nystagmus
i. Primary gaze
ii. evoked gaze
iii. Horizontal/vertical/torsional
iv. Fatiguable/not
b. Intention tremor
c. Rebound phenomenon (Holmes)
d. Dysmetria
(these tests to be done with eyes open and then eyes Closed and initially slow & then rapid)
i. Finger nose test
ii. Finger nose finger
iii. Knee shin dragging test
- First tap the knee with heel to r/o sensory loss
- Then excursion along skin of the tibia
(Cerebellar – broken movements)
(Sensory – waving of heel here & there)
iv. Finger toe test
e. Past pointing

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f. Alternating movements
    i. Draw a circle in air with finger/toe
    ii. Alternatively pat the foot steadily on the ground
    iii. Pronation – supination (Disdiadochokinesia)
    iv. Alternating opening and fisting of both hands
    v. Screwing like movements
    vi. Door knob opening like movements
    vii. Opposition of thumb and fingers
    viii. Tap out simple rhythm with finger.

g. Speech
h. Hypotonia
j. Pendular knee jerk
k. Titubation
l. Gait and how the patient stands
m. Drift
    i. Cerebellar – Upward
    ii. Pyramidal – Down and pronated
    iii. Parietal lesion – Upward and wavy

6. Gait

7. EPS
    a. Rigidity
    b. Tremor
    c. Mask like face
    d. Gait
    e. Micrographia
    f. Hypophonia
    g. Hypomimia

8. ANS

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a. Postural hypotension
b. Sweating

SUMMARY At the end of examination

FOUR TIER DIAGNOSIS

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