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Dr. Amrit Gopan

CNS case examination. Including Gen Exam.

① The 1st Impression : ○ Describe what is most striking.
○ Posture of the child / Decubitus.
○ Striking Nutrn status / Well or Ill child.
○ Dysmorphism if present.

② Vitals
Febrile / Afebrile
PR :
RR :
BP - all 4 limbs SOS. (Esp in Hemiplegia case, r/o Large Vessel vasculitis)
SpO_2 -
CRT -

③ Anthropometry — Obs — -3SD — -2SD — -1SD — Med
Weight
Height (Length)
Weight for Height -
Head circumference (Hc of parents if child is ab ⓝ).
BMI.
[AG (SOS)]
Impression of Anthro :

④ Head to Toe Exam
1) Skull :- Shape, Size (HC) Sutures, Fontanelles, Craniotabes, Transillumination, Cracked pot sign, Cranial Bruits.

2) FACE : ○ Facies ; ○ Hair ; ○ Oral cavity ; ○ Forehead. ; Coarse facies in CNS.

3) EYES : ○ Size of eyeball ; ○ Placement ; ○ Slant of palpebral fissure ; ○ Epicanthic fold ; ○ Eyelids

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o Eyelashes & Eyebrows ; o Conjunctiva ; o Cornea ; o Sclera ; o Pupils ; o Iris ; o Lens ; o Lacrimal gland ; o Vision.

* FUNDUS ; * KF-ring on SLE/naked eye
* TELANGIECTASIAS

7) EARS : o Placement ; o External ear canal R/L
o Otoscopic evaluation.

5) NOSE : o Size, shape ; o Nasal bridge ; o Alae Nasi
o Nares ; o Nasal Cavity.

6) MOUTH & ORAL CAVITY. o Mouth ; o Lips ; o Philtrum
o Buccal Mucosa ; o Gums ; o Palate ; o Tongue
o TEETH ; o Pharynx → UVULA, GAG reflex.

7) NECK : o Length ; o Rigidity ; o Swelling like LN pathy ; o Neck veins

8) HANDS, FEET & LIMBS (UL & LL)
o Handedness (can come in History / Gen. app: also)
o Size & shape ; o Color ; o Rash ; o NAILS → Clubbing, Koilonychia, infection ; o Bones & Joints
o DERMATOGLYPHICS.

9) SKIN : o Texture, Turgor, Rash. o Neurocutaneous markers ; o Palmar erythema, Spider nevi (Liver case). ; o S/o MICRONUTRIENT DEFICIENCY.

10) GENITALIA : * DO SMR STAGING.

** PALLOR, ICTERUS, CLUBBING, LYMPHADENOPATHY, EDEMA can appear in relevant places if POSITIVE, else in LAST that ---. are negative.

CNS EXAMN PROPER.

(A) HIGHER MENTAL FUNCTIONS.
1) Consciousness — GCS / AVPU.
2) General behaviour & appearance.
3) Orientn - stranger anxiety in infants, also parent familiarity.
4) Attentn span. - Digit repetn.
5) Speech & Language. - o appropriateness for age.
o Articuln, Volume of speech & Language.
6) Memory.
7) Intelligence.
8) Release Reflexes / FRONTAL RELEASE SIGNS:
o Grasp reflex ; o Glabellae tap ;
o Palmomental reflex. ; o Snout reflex ;
o Sucks reflex.

(B) CRANIAL NERVE EXAMN. [Right] [Left]
1) Olfactory
2) Optic : o Acuity → check Menace } for bedridden
o Colour ; o Field of Vn ↑
o Pupillary reaction, size. ; o Fundus examn.
3) Oculomotor } Eye movements.
4) Trochlear
6) Abducens.
5) Trigeminal Nerve -- open & close jaw, clench teeth.

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7) Facial N.
8) Vestibulocochlear N. - Tuning fork test.

9) & 10) Glossopharyngeal & Vagus.
- Movement of palate, uvula ; Nasal twang.
- Gag reflex → Obscure feeding.

11) Accessory spinal : SCM & trapezius testing.

(C) MOTOR SYSTEM.

1) Bulk of the muscle - size, shape, symmetry
2) Tone of the muscle
- Spasticity ; Rigidity. ; Truncal tone for Ataxia.
- Adductor angle ; Popliteal angle ; Dorsiflexion angle ; Scarf sign ; 180° flip test.

* For TONE assessment, 1st do 'INSPECTION' of posture; DONT JUMP TO PALPATE

3) Power. - Grading of power.
- Compare power of Uh & Lh.

** POWER is of Muscle groups (Biceps, triceps etc) & NOT OF JOINTS.

4) Reflexes. (Head should be Midline during DTR assessment)
(a) Superficial : Corneal, Conjunctival (CN 5, 7)
- Abdominal ; Cremasteric ; Anal.
- Plantar ⟹ Say FLEXOR/EXTENSOR (Babinski response) response (NOT up/down going).

(b) Deep Tendon reflexes.
B T K A S P.
(R)
(L)
also Brachioradialis/Supination.

** ELICIT CLONUS
** If knee Reflex is exaggerated check for extension of knee & a/w contraction of C/L adductors (CROSSED ADDUCTOR RESPONSE)

5) Gait.

(D) INVOLUNTARY MOVEMENTS

(E) SENSORY SYSTEM.

(F) CEREBELLAR SIGNS.

1) Dysarthria
2) Eye signs
3) Gait ataxia
4) Dysmetria
5) Intention tremor
6) Dysdiadochokinesia.
7) Dysarthria.
8) Hypotonia
9) Pendular reflexes
10) Rebound phenomena.

* Vermis lesion → Truncal Ataxia
Cerebellar hemisphere lesion → appendicular ataxia (dysmetria etc.).

(G) MENINGEAL SIGNS : Neck rigidity ; KS OBS.

(H) AUTONOMIC NS. ??

(I) PRIMITIVE REFLEXES.

Head up → 1) Decerebrate 2) Righting 3) Visual & auditory pathways. 5) Root values of various nerves.

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CNS CASE HISTORY POINTS.

1) Onset, Durn & progression of presenting complaints.
- Any precipitating factors.
- when did it start, what was child doing, sleeping or immed. post waking up.
- course of illness – severity maximal at onset? Is it improving or progressing? Is it ascending/descending symptoms.
- Associated complaints – FEVER, CONVULSIONS

2) CARDINAL SYSTEM HISTORY.

a) H/o related to higher funcns.
- level of consciousness, orientn, behaviour
- speech & language.

b) H/o handedness

c) H/r/o Cranial nerve involvement (in order from I to XII)
- collecn of food in cheeks, drooling of saliva
- Nasal regurgitn of feeds/change in voice.
- difficulty in smiling (CN5).

d) history related to Motor system
- h/o any wasting/thinning.
- h/o child being stiff/flaccid.

e) H/o stance, gait

f) H/o involuntary Movements

g) H/r/t sensory sys. involvement
- root pain, appreciates touch, pain; bladder, bowel.

h) H/r/t cerebellar involvement
- floppiness (hypotonia).
- h/o ataxia/nystagmus/intention tremor.

i) H/r/t ↑d ICT: headache/V_x/visual disturbances

j) H/o sleep. – loss of diurnal cycles. Excessive sleepiness or ↓d sleep.

3) H/O ETIOLOGY
- h/o diarrhea/dehydrn
- h/o trauma.
- h/r/t infecn – ear discharge, sore throat, exanthematous fevers, fever c̄ chills & rigors (Koch's contact)
- h/o fever/headache/altered sensorium (CNS infecn)
- h/r/t Cerebral Palsy – clenched fist, delay in sitting, crawling, inab. to feed etc.
- h/r/t Meningeal irritn – painful neck movements
- h/r/t soft Neurolog signs – inab. to do/perform certain activities c̄ should be done at that age.

4) H/O COMPLICATIONS
- Contractures
- Bed sores
- bladder/bowel probs. – UTIs, fecal impactn.

5) History related to other Systems.

a) CVS ↓ – palpitn, cyanosis

b) RS. – cough of chr durn; ab(N) breathing

c) GI – dysentery, V_x

d) Hemat – bleeding diathesis, pain in fingers.

e) Musculoskeletal – wasting of muscles.

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6) Antenatal /H.
- ↓d fetal movements
- h/o fever c̄ rash on painful LNpathy ; PIH, DM, Trauma
- h/o prolonged labour.

7) Birth/H
- Vaginal / cesarean ; Term / Preterm.
Forceps +
- Vertex / Breech . ; ? Birth Asphyxia.
- Birth weight, Length & Head Circumference.

8) Neonatal/H
- h/o fever, rash, petechial h'hage, jaundice, cataract (TV infecⁿ)
- h/o umbilical cord cath / jaundice / neonatal convulsion

CVS CASE EXAMINATION (Including Gen examⁿ which should NOT be missed)

1) Head to Toe
- Teeth → caries
- Face → Dysmorphic ; LENS → ? Cataract (say Y/N).
- Palate → High arched / cleft.
- s/o Infective endocarditis. – say NO signs if so.
- Joints – swellings +/–.
- Chest deformities – Pectus, Harrison sulcus etc if +.

DONT FORGET TO PALPATE CAROTIDS in a cvs case.

FOUR LIMB BLOOD PRESSURE & SPO_2 in cardiac cases.

CVS PROPER

(A) Inspection
1) Precordium – bulge, skeletal ab(N)ities
2) Apical impulse : • Locⁿ, character of apical impulse, if visible.
- Look for ab(N) pulsⁿˢ in the (L) parasternal, supra-sternal & neck areas.
3) Venous prominence. – for SVC obstrⁿ.
4) Scars / sinuses.

(B) Palpation
Keep palms of both hands on either side of the sternum to feel the cardiac impulse & pulsations.

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1) Apical area – site, character (N/abN) if Localizable.
2) Precordial – i) (L) parasternal ii) Epigastric region iii) Suprasternal notch iv) Pulm area.
Look for abN pulsatn.
3) Left Parasternal – Lift / Heave ⊕/⊖.
4) Mitral area – } thrills & their timing
5) Aortic area – } Pulsn
6) Pulm area – } Heaves/lifts
7) Tricusp area } – Sounds.
8) Carotids.

(Parasternal Heave → Pulp of 2nd, 3rd, 4th & 5th fingers to detect) & Ulnar border to press & grade.

Thrills – medial border (Ulnar) of (R) hand and hypothenar eminence.

(C) Percussion – Limited value

(D) Auscultn: Areas

1) Apex – Mitral area (MA)
2) Aortic Area (AA) & 2nd Aortic area – (3rd (L) ICS parasternal)
3) Tricuspid Area (TA) @ (L) 4th ICS & 5th ICS parasternal.
4) Pulmonary area (PA) – 2nd (L) ICS parasternal.
5) (L) & (R) Infraclavicular regions.
6) (L) anterior axillary line & over BOTH AXILLAE.
7) Over Both Carotids → Auscultate the BACK too at last.
8) Over Both INTERSCAPULAR REGIONS (for Pulm / Aortic / collaterals murmur).
9) Over Femorals, Brachials, Popliteals.
10) Cranium, Fontanelle & both Lumbar regions (Renal areas).

* Order (Auscultate) Apex → TA → PA → AA → Carotids.
* Palpate carotid while auscultating Heart sounds.

CVS History – POINTS

1) Onset, Durn & Progression of chief complaints suppose – COUGH, FEVER, DIFFIC. BREATHING.

2) CARDINAL SYSTEM HISTORY / Other Symptoms of the CVS whether present or not.
a) Interrupted BF / Suck - rest suck cycle.
b) Fast breathing / Diffic breathing
c) Excessive forehead sweating; h/o palpitns (older).
d) Recurrent LRTIs.
e) Inactivity / ↓d activity / easy fatiguability
f) Ab(N) precordial activity / feel of thrill by mother while giving bath.
g) h/o bluish discolorn of oral cavity / tongue.
h) h/o cyanotic spells / squatting episodes.
i) h/o restlessness / lethargy / irritab / sleep disturbance.
j) h/o chest pain.

3) h/o ETIOLOGY.
- Usually the above points will itself give a clue to etiology (overlapping basically).
- h/o any other extracardiac anomalies, dysmorphisms (more on examn).
- h/o sore throat, fever, joint pains / swelling for RF. also h/o invol movements.

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4) H/o COMPLICATIONS.
a) H/o failure to thrive
b) H/s/o Cardiac failure - edema feet / puffiness of eyelids, abdo. distention.
c) H/o oliguria - for CCF
d) H/s/o thromboembolic phenomena - CNS complaints
e) H/s/o Infective endocarditis - fever, rash, hematuria.
f) H/o bleeding episodes (Cyanotic CHD → TCP ; RARE)

5) ANC & Birth. (Imp. points).
- Drug intake by mother. / Irradiations.
- Diabetes in Mother (DONT FORGET THIS).
- Fever ē rash in 1st trimester ē LNpathy

6) Immunisn
- Ask if special / optional vaccines have been given

5/6/2016/thu

ABDOMEN CASE EXAMINATION (including Gen exam^n points not to be missed).

General Exam^n Relevant to Abdomen.

1) 1st Impression : - Say whether sick or not, comment on decubitus, whether in pain or not.
2) Head To Toe . {Say if there is Hemolytic facies Y/N in Anemia case}
a) Jaundice
b) Pallor
c) Cutaneous bleed (HSM ē anemia) Petechiae/Purpura to be mentioned.
d) Lymphadenopathy - (for TB)
e) Signs of liver cell failure : Palmar erythema ; Spider angioma
f) Edema & Dehydr^n
g) JVP
h) Clubbing (Chronic liver d/s).
i) Bony tenderness.
j) Nutri^nal status.
* Remember → KF ring for Wilson's ; s/o Vit A def.
k) Oral cavity - Vitamin deficiency signs
* Look for hyperpigmented knuckles if it is Anemia ē HSM case ; Also say no limb / hand / thumb anomalies if anemia case. Mention Leg Ulcers.

ABDOMEN EXAMINATION PROPER

A) Inspection - Pos^n ideally supine ē flexed lower limbs. Toddlers can be examined in standing pos^n.
1) Shape : - Fullness
- Obvious visible swelling / Distention
- Scaphoid abdomen?
(Stand on foot end of the child to look for symmetry)

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2) Abdominal Movements.
3) Umbilicus : Posn & shape. Whether towards the pubic symphysis alone. [Xiphi - Umb. dist.]; [Umb - Pubic symph distance]
4) Skin Scars / Incision.
5) Superficial Dilated Veins (s/o venous obstruc").
   o Color & flow direction.
   (In Portal HTN Direc" of flow is AWAY FROM UMBILICUS)
6) Visible peristalsis.
7) Pulsation : o Epigastric (RVH)
   o Pulse over Sternum.
8) Growth & Scrotum (If not examined in Gen Exam)
9) BACK EXAMINATION (DO not forget)
   o Renal - Tenderness / guarding / warmth.

(B) Palpation → Deep palpn.

1) Liver palpn : o Size ; o Surface ; o Consistency ; o Margin
   o Tenderness.
2) Spleen Palpn : o Size (cm) ; o Consistency ; o Splenic notch PALPATE PARENTS SPLEEN if Hemat Case.
3) Kidneys palpation.
4) Urinary bladder.
5) Any Abdominal Lumps, Recoiling etc.
6) Abdo wall edema.
** Take Abdo Girth if not taken in anthro.

(C) Percussion

1) Puddle sign (150ml)
2) Shifting Dullness (500ml)
3) Horse shoe shaped dullness
4) Fluid thrill (1.5L)
5) LIVER SPAN. (Can be mentioned above in palpn).

(D) Auscult" : 1) Bowel sound (Imp)
2) Renal bruit } (Not very Imp)
3) Venous hum }

* SAY U want to do a NAKED EYE inspc of stool examn as part of clinical examn itself.

ABDOMEN CASE HISTORY - Points

1) Pain abdomen - site, Radiation, Timing, Intensity, Character.
2) Vomiting - Bilious / Non bilious, Timing, Colour, Projectile or not.
3) Constipn - Duel", Assoc. ↓ bleeding or not.
4) Diarrhea - Duen, Frequency, d/w blood / mucus, Urine output.
5) Jaundice - Course of jaundice, Past history of jaundice, Urine & stool colour, h/o BTx.
6) Bleeding from any site - Hematemesis, Melena, Hematuria, Bleed PR.
7) Urinary Complaints - Dysuria, Output, Colour.
8) Alteration in appetite
9) Scrotal swelling.

* Apart from O/E, ask for associated complaints & aggrav. & relieving factors for each complaint.

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SAM Case - Examⁿ format

(A) General Condition / 1st Impression:
→ Combine the following
1) Consciousness - Normal / altered.
2) Nutritional status
3) Mental status - alert / dull.
4) Emotional state - happy, comfortable & interested in surroundings or - Reserved examⁿ, Ill, irritable, apathetic, not interested in surroundings.

(B) Edema
Pallor
Icterus
Cyanosis
Clubbing
The PICCLE (either here or after the HTTE).

(C) HEAD TO TOE examⁿ.
1) Skull: ○ shape ; ○ Size ; ○ AF & PF
○ Craniotabes ; ○ Bossing.
2) Hair: ○ Hypopigmented / sparse / thick & easily pluckable
○ Alopecia ; ○ Flag sign.
3) Face: ○ Moon Face vs Old Man look.
4) Eyes: ○ Conjunctival xerosis, Bitot's spots
○ Corneal xerosis / ulcer.
○ Pallor.
○ Puffy eyelids.

5) Ears: ○ ear discharge.
6) Mouth: ○ Angular stomatitis, Cheilitis
○ Oral thrush; Dental caries; Pharyngitis.
○ Gums - Bleed on ; ○ Teeth - Delayed dentition.
7) Tongue: ○ Glossitis / Beefy tongue / Bald tongue
○
8) Neck: ○ LN pathy
9) Chest: ○ Rachitic Rosary; ○ Scorbutic rosary; ○ Harrison's sulcus. **
10) Abdomen: ○ Distention (hypotonic).
11) Extremities: ○ Edema; ○ Wasting;
○ Bony deformities.; ○ NAILS - color, brittleness
12) Skin changes: ○ Pigmentation; ○ Dermatosis
○ ↓ d skin turgor; ○ Impetigo; ○ Hypo/Hyper-pigmentation; ○ Flexural ulcers
○ Petechiae / Purpura / poor wound healing.
(ask in history also)
13) Genitalia
14) Rectum & Anus: ○ Rectal prolapse (Cheiralis)
○ Perianal excoriation (Lactose malabsorption/Candidiasis)

(D) SYSTEMIC EXAMⁿ
All 4 systems to be examined.

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SAM - Case - HISTORY POINTS.

(1) Onset Durⁿ & Progression of chief complaints.

a) Edema - Progressive / non prog.
b) Vomiting - Interval b/w last feed & Vx
c) Diarrhea - Onset, Durⁿ, Frequency, consistency, colour, volume, foul smelling, blood stained, frothy / oily, worms? precipitated by some food, assoc pain / Vx, Aggrav / Reliev. factors.
- What is the diet given during diarrh
- Is child on any laxative?
- Any e/o prolapse of rectum noticed.

d) Abdo distention.

(2) H/o Etiology

1) H/o Ear discharge
2) Skin lesions / Rash / exanthems / Measles
3) Recurrent Resp tract infecⁿˢ
4) Oliguria / polyuria (Renal causes)
5) Jaundice / (chr. Liver dis)
6) Steatorrhea (malabsⁿ)
7) Pica.
8) H/o TB / TBC
9) Prolonged hospitalizⁿ.
10) H/o feeding / swallowing problems

(3) H/o Complicⁿˢ
1) H/o wasting of muscles
2) " ↓d activity
3) " loss of appetite / loss of weight.
4) " dyspnea, chest pain, palpitⁿ. (CCF)
5) " convulsions (hypoglycemia)
6) H/s/o Micronutrient deficiency
- poor Dark adaptⁿ / photophobia
- bleeding tendency (Vit C / Vit K)
- Diffic in walking / deformities (Vit B12 / Vit D)

(4) Antenatal & Birth / H.
1) Age of Mother.
2) Weight of mother, weight gain during preg
3) Immunizⁿ (TT etc)
4) ANC - Checkup
5) Work profile during preg.
6) Time period: last preg.
7) H/o DM / HTN / UTI.
8) H/o maternal malnutrⁿ
9) H/o threatened abortⁿ.
10) Birth Order, Birth weight.

(5) Neonatal / H.
1) Colostrum / Prelacteal feeds / BF.
2) EBF Y/N.

(6) Diet / H. : EBF till when ; Mother's percepⁿ of Milk output. Cultural practices.

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- Veg / Non Veg
- Micronutrient consumption.
- Top feed - dilution etc. details; Method.
- Weaning history:
- Calories Esp Obs Def.
  Proteins.
  Details of micronutrient deficiency.

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