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CLINICAL PEDIATRICS EDITION 2008

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History and Examination

1. **Personal history**: It includes the **name, sex,**
Age...I+ help in diagnosis (Congenital v.s Rh H.D) nutritional v.s non-nutritional
Address.....Nutritional & Bilharizasis.....
2. Complaint: (± Duration): *one C/O only in patient's own words* (the main symptoms that necessitate medical consultation).
3. Present history: variation
Analysis of C/O: - Onset: sudden, acute, gradual, insidious what ↑ complain & what ↓ it.
- Course: progressive, regressive, stationary -Duration

.....

.....

.....

Associated symptoms-investigations- treatment.....

Other symptoms of same system.....

.....

Other symptoms of other systems.....

.....

• SYMPTOMS OF DIFFERENT SYSTEMS

1-Cardiovascular symptoms;

a- Pulmonary Congestion Dyspnea, cough, hemoptysis

b- Systemic congestion (Edema, ascites, jaundice

c- Low cardiac output symptoms (Easy fatigability.)

d- Cyanosis (Onset ,Cyanotic spells , Squatting) نوبات شديدة

e -Palpitation: ***awareness of heart beats***

f- Pain Site, Radiation, Character, Intensity , effect of ttt on pain

2. **Chest symptoms:**

(I) Cough (II) Expectoration (V) Pain (VI) Wheezes

(III) Hemoptysis (IV) Dyspnea (VII) Cyanosis

3-Abdominal Symptoms:

- Pain.
- Upper GIT Symptoms: Anorexia - Vomiting - Dysphagia - GERD
- Lower GIT Symptoms: Constipation - Diarrhea - Colics - Bleeding per rectum.
- Peritoneal: Abdominal distension and ascites.
- Splenic: Pain: Dragging pain ***(splenomegaly)*** Pallor Purpura

Stitching pain ***(perisplenitis)*** Bleeding tendency

- Urinary: Oliguria - Polyuria- Dysuria - Frequency - Hematuria

4. **Neurological Symptoms:**

Symptoms of ↑intra-cranial tension: Headache -Vomiting - Blurring of vision.

Symptoms of Cranial nerve affection;

4.1st: Loss of smell

4.2nd: Diminution of vision

4.3rd, 4th and 6th: Squint, diplopia.

4.5th: Loss of facial sensation and difficult mastication.

4.7th: Deviation of the mouth, accumulation of food behind cheeks

4.8th: Hearing loss

4.9th, 10th: -Nasal regurgitation of food,hoarseness, dysphagia.

4.12th: Difficulty in speech.

Motor System:

* Destructive: Weakness or paralysis
* Irritative: Convulsions or fasiculations.

Sensory System:.Destructive: Hypothesia or anaethesia

.irritative: Parathesia (abnormal sensation)

Sphincteric Troubles: Incontinence of urine or stool.

Past history

a) Perinatal history:

1. ***Prenatal***: Maternal illness as diabetes, toxemia, maternal medications and x-ray procedures.
2. ***Natal***: Duration of pregnancy-type of labor
3. ***Postnatal***; convulsions , respiratory difficulty, bleeding, jaundice, fever, sepsis, infection or vomiting.

b) Developmental history

1. *Motor development:* head support ---------- Sitting---------- standing---------- and walking----------.
2. *Mental development:* Social smile---------- speech----------

c) Nutritional history Q&Q

1. Type of feeding (breast or bottle), amount/feed, number of feeds/day and the concentration of milk and how taken.

d) Vaccination history B.C.G. vaccine (at birth), oral poliomyelitis, D.P.T. and hepatitis B vaccine (at 2, 4 and 6 months), measles vaccine (at 9 months), MMR (at 15 months).----------

---------- Vaccination is completed after 1 years ----------

---------- Vaccination is up to date ----------

e) Previous infections, significant illness, **trauma, operations or accidents.**

Family history

a) Parents: consanguinity.
b) Siblings: any similar illness.
c) Significant events →abortion, rheumatic disease, diabetes-tuberculosis. T.B.

Physical examination

- In late infancy and early childhood→ while the infant or the child is held in the mother's lap or over her chest.
- Painful procedures (as throat examination) should be left to the end.

1. Observation: - ***Level of consciousness (LOC) and activity:*** Conscious, lethargic or comatose

- ***Appearance:*** Pallor, cyanosis, jaundice
- **Abnormal** features (e.g. mongolism).

2. Vital signs:

a) Temperature: 37.0 - 37.5°C.
b) Heart rate: Normal heart rate varies ----------
c) Respiratory rate: ----------
d) Blood pressure----------

3. Measurements: How to measure:

Weight:

- From birth - 2 years → weighed naked on an appropriate, self-calibrating or regularly calibrated scale.
- An older boy should be weighed with his underwear. Record to the nearest 0.1 kg.

Head circumference:

- Taken from midway between the eyebrows and the hairline at the front of the head and the occipital prominence at the back.

Supine length:

From birth to 2 years, a boy should be measured on his back with appropriate equipment (headboard) and moveable footboard. One person holds the head with the head facing upwards & second person measures the length by bringing the footboard up to the heels. Ensure that the legs are flat at the knee joints.

Standing height:

From approximately 2 years onwards, standing height should be measured against an appropriate vertical measure. The heels should be together with the buttocks and shoulder blades touching the vertical and the head positioned →Frankfurt plane

Regional examination

a) Head and neck:

- *Anterior fontanel:* At birth ----3fingers----at 6 months ----1 1/2----
- Craniotabes: press on the skull bones----------
- *Face:* abnormal features ----------
- facial wasting - swelling or hair changes ----------
- *Eyes:* jaundice----------, unequal pupils---------- ---------.
- *Ears;* low set ears----------.
- *Mouth* pallor----------, cyanosis----------
- Teeth examination----------.

- *Neck:* Neck rigidity: elicited by placing the palm under the occiput and lift- Congested neck veins- Thyroid swelling

Lymph nodes: by continuous sweeping motion ----------

Neck veins, cervical lymph node or thyroid swelling.

b) Upper and lower limbs: edema, clubbing of fingers, deformities----------
----------.

c) Skin: → rash ----------or skin changes of kwashiorkor----------
---------- Skin turgor----------, pigmentation----------
--------.

d) Back and spine: kyphosis or lordosis, scoliosis or a swelling (as meningocele or meningomyelocele).

e) Genitalia:, undescended testis or hypospadius, scrotal swelling (as hydrocele) or inguinal hernia.

5. Systemic examination: It includes neurological, cardiac, chest and abdominal examination.

Marasmus

History→

Personal→ Infancy (6months-2 years)

→ Residence……

Complaint

. Loss of weight or failure to gain weight

. One of the complications e.g. gastroenteritis or chest infection

Present history

. Analysis of complaint

.Determine whether the cause is nutritional or non-nutritional

- Nutritional **Q&Q**

-lactation :(breast or artificial) - amount - frequency - concentration of formula (artificial)

- weaning: onset, foods, method, daily amount - Supplements: (vitamins, minerals)

- Non nutritional

- Symptoms of heart failure→ cyanosis or dyspnea with feeding.

-history of urinary troubles

-Symptoms of chronic infection e.g. chronic chest symptoms .

-symptoms of CHRONIC DIARRHEA

- Symptoms of developmental defect.

-Symptoms suggestive hunger

-history of vitamin Deficiency

-recurrent or persistent chest infection

- **Associated symptoms-investigations -treatment**

Past history

a) Perinatal history:

Prenatal- Natal-Postnatal

b) Developmental history

Motor development:

Mental development:

c) Nutritional history

Type of feeding (breast or bottle), amount/feed, number of feeds/day and the concentration of milk and how taken.

d) Vaccination history

e) Previous infections, significant illness, **trauma, operations or accidents.**

Family history

Parents: consanguinity.....

Family history of TB.....

Similar condition in the family.....

Examination

General

Measure the body height or length & compare it with percentile

- Vital signs: Respiratory rate.....

Body temperature.....

-Head

Eye: Sunken if there is dehydration .

Buccal fat loss → 3rd degree marasmus .

Mouth: → Lips: pallor due to associated anemia

Angular stomatitis due to vitamin deficiency

Monilial infection.

Teeth: delayed dentition.....

- Limbs

Loss of subcutaneous fat from buttocks and thigh.....

Skin is wrinkled.....

Muscle wasting.....

Edema if present, the case is marasmic kwashiorkor

Dermatitis .....

- Systems

- Chest: chest infection.....
- Abdominal: examine for renal mass- HSM.....
-Examine heart.....
- Examine the nervous system.....

Questions to be asked:

1- SC fat? .....

2- Is the muscle bulk size ? ....

3- Vit. Deficiency ? ....

- What is your diagnosis?

A case of protein energy malnutrition (marasmus).

Type: Nutritional or non-nutritional.

Degree: first- second -or third degree.

Complications as chest infection or gastroenteritis

What are the causes of non-nutritional marasmus?

Investigations in nutritional cases

. Complete blood picture

. If diarrhea is prominent (electrolytes - stool analysis and culture)

. If chest infection is present (chest x ray).

Investigations in non-nutritional cases depend on the suggested cause

- What are the causes of death in marasmus?

What are the main line of treatment of marasmus?

Kwashiorkor

History

Personal

→Age: infancy 6 MO -2 years

→ Residence……

Complaint

. Swelling of lower limbs (may be the dorsum of the foot only).

One of the complications

Diarrhea- Chest infection (cough and dyspnea)

Present history

. **Analysis of the complaint**: edema as regard site of onset - course and duration.

Determine that the cause of edema is nutritional: -

1- Poor nutritional history: stress on scanty breast milk with wrong compensation with carbohydrates only. Minimal or no intake of protein especially high biological value protein Or wrong weaning with carbohydrate diet only .g. starch, rice water

2- Repeated attacks of gastroenteritis

3- Absence of symptoms that suggest non-nutritional cause of edema .

Cardiac – Renal - Hepatic

- Associated symptoms-investigations -treatment

History of diarrhea

History of any severe preceding illness

History of skin infection

History of hair affection

History of respiratory infection
Symptoms of heart failure

Past history

a) Perinatal history:

Prenatal- Natal-Postnatal

b) Developmental history

Motor development: ……..

Mental development: ……..

c) Nutritional history

Type of feeding (breast or bottle), amount/feed, number of feeds/day and the concentration of milk and how taken……..

d) Vaccination history

***e) Previous infections, significant illness,* trauma, operations or accidents.**

Family history

Parents: consanguinity

Similar condition in the family……..

Examination

1-General

Mental state

Measure the body height or length & compare it with percentile

Vital signs: RR……..……..TEM……

Head

Hair changes: light in color- sparse.

Lips: pallor due to associated anemia Angular stomatitis due to vitamin deficiency

Monilial infection (white plaques seen in the buccal mucosa)

Teeth: delayed dentition.

Limb

Lower limb Edema of the dorsum of the feet, it may extend to involve the whole limbs

. Skin changes: crackling, fissuring or ulceration.

Muscle wasting and loss of subcutaneous fat in marasmic kwashiorkor

2- Systems

. Chest: **chest infection**

. Abdominal: may be **hepatomegaly** in nutritional recovery syndrome

No ascites

. Neurological: Mental changes: apathy.
Cardiac: anemic heart failure

What is your diagnosis?

This is a case of protein energy malnutrition (Kwashiorkor) complicated by gastroenteritis.

-pathogenesis of constant and variable findings in kwashiorkor?

- important investigations in kwashiorkor?

- differential diagnosis of skin changes in Kwaskiorkor?

- Pellagra: skin changes are present in sun exposed areas
- Diaper dermatitis
- Acrodematitis enteropathica

- Treatment in kwashiorkor?

Down syndrome

History

Complaint

- Delayed motor developmental milestones
- Delayed mental developmental
- One of the complications :shortness of breath (with heart failure)

Present history

Analysis of complaint

-Motor retardation (according to the age…… ……
…… …… …… ……...).

-Mental retardation: delayed speech……..

- Hypotonia
- History of one of the complications……

- Associated symptoms-investigations -treatment

Past history

Perinatal history:

Prenatal……

- Natal-Postnatal

b) Developmental history

Motor develop

Mental develop.

c) Nutritional history
d) Vaccination history
***e) Previous infections, significant illness,* trauma, operations or accidents.**

Family history

Parents: consanguinity **-Similar condition in the family**

Maternal age:

- Over 35 in non disjunctional type
- Young maternal age suggest translocation type

Examination

1- General examination

Head	Hair	Eye	Nose
Ear	Mouth	Neck	
Limbs	Hands	Feet	

2- Systems examination

Heart: (ventricular sepal defect or atrial septal defect)

Ventricular septal defect is commonly found

- Murmurs

  Site: 3rd and 4th Intercostal space at left parasternal line

  Area of maximum propagation: all over the precordium

  Character: harsh

  Timing: Pan systolic

- Sounds (pulmonary hypertension)

  Accentuation of the pulmonary component of the second heart sound

Chest infections

Abdominal: distention due to hypotonia and may be umbilical hernia

Neurological: hypotonia

What is your diagnosis?

A case of Down syndrome

- Most probably non disjunction type

- With or (without): - congenital heart disease in the form of ventricular septal defect and chest infection

What to do for him?

Investigations

- Chromosomal study (karyotyping) to determine the genetic type and risk of recurrence
- Imaging to assess the presence of associated congenital abnormalities
- Plain X ray

  Pelvis: Broad iliac bone- shallow acetabulum.

  Hand: Rudimentary second phalanx

  Chest: pneumonia
- Echocardiography: cardiac anomalies
- Abdominal ultrasonography :

What are the common congenital abnormalities in Down syndrome?

- Congenital heart disease (endocardial cusion defect: ASD- VSD)
- GIT anomalies: duodenal atresia, imperforate anus
- Urinary tract anomalies

What are the causes of death in Down syndrome?

- Accidents
- Heart failure in presence of congenital anomalies
- recurrent infections
- Leukemia

What is the risk of recurrence of Down syndrome?

- Non disjunctional type: the higher the maternal age the higher the risk of recurrence
- Translocation type: in translocation 21 to 13.14,15, or 21

  1/3 normal: normal phenotype and karyotype

  1/3 translocation carrier: normal phenotype only

  1/3 down syndrome
- Translocation 21 to21 : 100% are Down syndrome

What are the types of chromosomal aberrations?

What are the causes of genetic diseases?

Modes of inheritance

Treatment of Down syndrome ?

What are the causes of chromosomal aberrations in general?

Neonatal jaundice

History

Complaint

Yellowish coloration of the **skin, sclera & mucous membrane**

Present history

- Onset: age at onset of jaundice

- Early onset **jaundice**
  - First 24 hours (hemolytic disorders- congenital infections)
  - After the 3rd day(Cephalhematoma- Septicemia)
- Late onset jaundice or persistent jaundice
  - Prolonged unconjugated
    Breast milk
    Hypothyroidism
    Criggler Najjar syndrome
  - Conjugated (cholestasis)
- Color of **urine** and **stool**
  - Clay colored stool in cholestasis
  - Dark urine in hemolytic disorders

-pallor

- Associated symptoms-investigations -treatment

Past history

Perinatal history:

Prenatal History of previous abortion or blood transfusion -History of (fever, rash or lymphadenopathy) may suggest TORCH

- *Natal*: Premature rupture of membranes ⟶ septicemia

Mode of termination e.g. traumatic ⟶ Cephalhematoma

……

-*Postnatal*……

Nutritional history Breast feeding >>breast milk jaundice

Family history

* Similar conditions in the family >> breast milk jaundice

Rh incompatibility TORCH infection
Hemolytic anemia in the family

Examination

1- General examination

- Measurement; Microcephaly in TORCH infection
- Head
    - Cephalhematoma - forceps marks
    - Eye: jaundice
    - Lips: pallor (suggest hemolytic cause)
- Trunk :
    - Umbilicus: umbilical sepsis
    - Skin color: lemon yellow (unconjugated)

2- Systems examination

- Abdomen: hepatosplenomegaly in cholestasis
- Neurological: Moro and suckling reflex to rule out kernicterus

What is your diagnosis (example) ?

A case neonatal jaundice most probably RH incompatibility --

Why ?

From history

Jaundice noticed by his mother at the first day of life.

No change in stool color (stool is not clay).

The mother was told that she is RH -VE but she did not receive anti D injection after the first delivery.

Normal antenatal, natal and postnatal history

From examination

Generally.....

Jaundice, pallor.....

No organomegaly.....

What to do for him?

Investigations

- Serum bilirubin (conjugated and unconjugated) to prove type of hyperbilirubinemia
- Blood picture
    - HB % and

- Reticulocytosis → hemolysis

- To exclude hemolytic disease
  - Blood grouping (ABO and Rh) for baby and mother
  - ABO: mother usually 0 with a baby A
  - Rh: mother Rh-, baby Rh +
  - Coombs' test
- To exclude hemolytic anemia
  - Enzyme assay: G6PD deficiency
  - RBCs morphology and osmotic fragility test
- Discuss the mechanism of Exchange transfusion
- What are the indications of Phototherapy
- What are the side effect of Phototherapy
- What are the indications of Exchange transfusion

Rickets

13/12/2007

History

Personal

RESIDENCE.....

Age: 1-3 years

Complaint

- Delayed **d**evelopmental motor milestones (sitting, standing .)
- Delayed **d**entition
- **D**eformities
- Chest infection (cough, shortness of breath): very important

Present history

Mental development will be asked about in the past history.

- analysis of the Complaint
- Nutritional history
  - **Prolonged breast** feeding without weaning
  - **Rachietogenic diet**
  - Inadequate exposure to **ultra-violet rays** (sun exposure)
- Absence of any manifestations that may suggest non vitamin D deficiency rickets (**hepatic- chronic diarrhea- polyurea** in renal tubular rickets).
- Complications e.g. chest infection or (tetany)

- - **Associated symptoms-investigations -treatment**

Past history

a) Perinatal history:

Prenatal- Natal-Postnatal

b) Developmental history

Motor development: ……..

Mental development: ……..

c) Nutritional history

Type of feeding (breast or bottle), amount/feed, number of feeds/day and the concentration of milk and how taken……

…… ……..

d) Vaccination history

***e) Previous infections, significant illness,* trauma, operations or accidents.**

Family history

Parents: consanguinity

Similar condition in the family……..

Examination

1- General

- Vital signs:, respiratory rate (increased with chest infection)
- Measurements: Head circumference (increased)……...
- Head

  Skull **a b c d**
- Limbs: (**broadening- Marfan sign**- deformities in the **UL & LL**)
- Trunk: kyphosis due to weakness of muscles and ligaments

  It is correctable

2- Systems

- Chest

  Inspection: thoracic cage signs of rickets

  - Rossary beads
  - Pigeon chest
  - Harrison sulcus
  - Longitudinal sulcus

  Auscultation for chest infection (usually present)

- Abdomen
  - Abdominal distention
  - Liver is palpable (ptosed liver), the upper border of hepatic dullness below normal (normally it is in the 4th intercostal space in mid-clavicular line

What is your diagnosis?

A case of vitamin D deficiency rickets (nutritional rickets) complicated by chest infection

Why?

From history

-Delayed developmental motor milestones

- Normal developmental mental milestones

- No supplementation by food rich in vitamin D.

-Improper exposure to sun rays

From examination

Discuss all the characteristic features of rickets

What are the causes of nutritional rickets?

What are the causes of non nutritional rickets?

What are the treatment options?

Investigations to prove the type of rickets

- Laboratory

- Blood :

  Serum Ca: **normal** (N: 9-11 mg %)

  Serum P: **marked decrease** (N: 4.5: 6.5 mg %)

  Serum alkaline phosphatase: **high** (the earliest manifestation)

- Urine :

  Ca: Absent. >>>>>>>>>>>>>>>>why……..

  Phosphate: marked increase. >>>>why……

Radiological (mention)

What are the causes of tetany in association with rickets?

What are the causes of tetany in association with treatment of rickets?

What is the clinical picture of tetany?

What is the treatment of tetany?

Slow IV Ca 10% 1-2 ml/kg

What are the main lines of treatment of rickets?

- Vitamin D therapy:

- Oral: 2000-5000 IU/day for 4 weeks.
- I.M.: 600,000 IU single injection.

Failure of response after 4 weeks → suspects vitamin. D resistant rickets.

Discuss hypervitaminosis D?

Discuss hypervitaminosis A?

Discuss THE TREATMENT OF hypervitaminosis D?

Discuss causes, clinical picture, investigations and treatment of vit D resistant rickets?

Hydrocephalus

History

Complaint

Progressive head enlargement usually since birth

Present history

- Complaint analysis

  Onset, course (progressive), duration

- Trial to determine the cause of hydrocephalus (usually congenital)
  - Antenatal History, maternal infection rash, contact with cats (toxoplasmosis)
  - Natal history to exclude traumatic delivery
  - Neonatal history: infection e.g. meningitis
  - Developmental history

Neurological symptoms delayed- *Motor development*
-Mental development

- convulsions - blindness- paraparesis,
- **Associated symptoms-investigations -treatment**

Past history

a) Perinatal history:

Prenatal- Natal-Postnatal

b) Developmental history

Motor development: ……

Mental development: ……

c) Nutritional history

Type of feeding (breast or bottle), amount/feed, number of feeds/day

d) Vaccination history

e) Previous infections, significant illness

Family history

Parents: consanguinity

Similar condition in the family……..

Examination

1- General

Head

- Measurements: head circumference should be measured
- Scalp skin: thin and shiny
- Scalp veins: prominent
- Anterior fontanelle: widely opened
- Sutures: widely separated
- Macewen or cracked pot sign: resonant note on percussion due to suture separation
- Face: globular and prominent forehead
- Eye: sun set appearance -forward and downward displacement due distortion of nerve supply
- Neck: shunt may be present and can be palpated

Back

For any swellings: meningocele or meningomyelocele

2- Systems

Neurological

- Motor system
  - Inspection of the muscles (wasting)
  - Tone: spasticity of limbs due to compression on motor area 4
  - Power: for evidence of paralysis

- Reflexes: exaggerated (upper motor neuron lesion)

If meningomyelocele is present, denervation of the both lower limb occur →lower motor neuron lesion and sensory loss is expected leading to flaccid paralysis hypotonia and hyporeflexia

- Cranial nerves
  - Optic atrophy in chronic cases
  - 6 Th nerve palsy (if there is squint)

What is your diagnosis?

A case of congenital hydrocephalus with or without meningomyelocele.

What are the investigations?

- X-ray skull: craniofacial disproportion -wide separation of sutures
- Cranial ultrasonography
- CT scan (the most important)
- MRI in doubtful cases

What are the lines of treatment?

What is arrested hydrocephalus?

What is the differential diagnosis of hydrocephalus ?

What are the complications of meningomyelocele ?

- Rupture- infection- meningitis
- Nerve tissue damage (paralysis-incontinence)

How can you differentiate clinically between myelocele, meningocele and Meningomyelocele ?

If hydrocephalus and meningomyelocele are present, which one is corrected first?

Hydrocephalus must be operated first to lower the tension that will be followed by collapse of meningiomyelocele. If meningomyelocele was operated first recurrence is expected due to increased amount of CSF

What are the complications of shunt operation?

- Infection - Obstruction
- Shorting of the tube with time that necessitate repeated shunt

How can ct help in the DD of the disease?