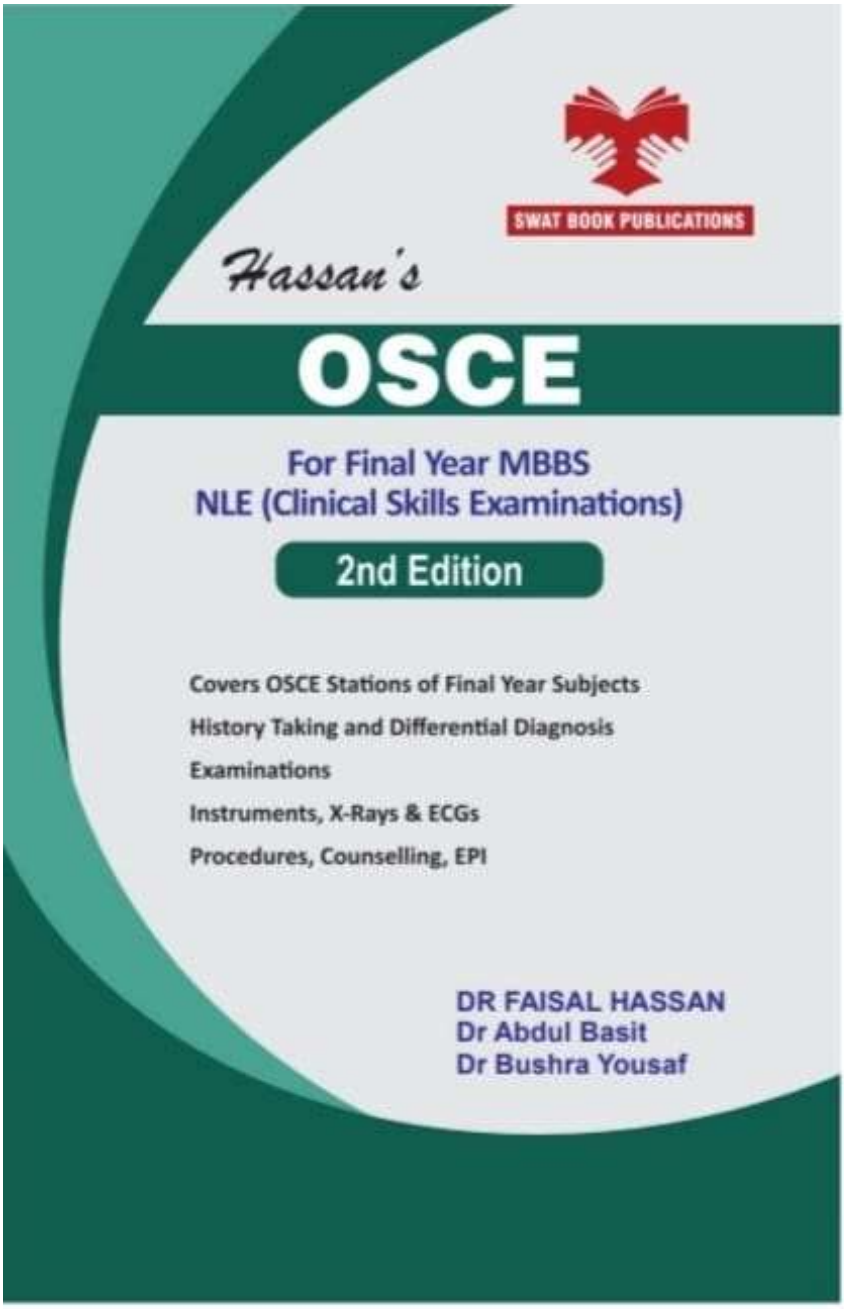
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- ✓ **Total Number of Pages=353**

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PREFACE

When I was a student of final year MBBS at KMC, I found it very difficult to study for TOACs examination. Because one has to study different books for different OSCE stations. So I felt the need to combine all the relevant OSCE stuff in one book form, i.e. examination, instruments, and other stations.

Great effort was made in writing and compiling of this book. Most of the stuff is taken from standard books along with ward lectures and examination books.

This book almost covers all stations in medicine and Paediatrics TOACs. However, it should be kept in mind that without proper practice of these stations and without performing these examinations on patients, this book will give you theoretical clue.

Please let us know your feedback and suggestions for improvement of stuff in the next edition at

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FACEBOOK PAGE: HASSAN OSCE GUIDE

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DR. FAISAL HASSAN
KMC PESHAWAR

Hassan's OSCE (2nd Edition)

THIS BOOK INCLUDES:

Ward lectures of

- DR. HUMAYUN (HOD MEDICAL WARDS)
- DR. HASHIM (PROF.MDW KTH)
- DR. AWAIS (AP. MDW KTH)
- DR. GHULAM SHABBIR (PROF. MCW KTH)
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POINTS FROM:

- NICHOLAS TALLEY
- MACLOED'S
- BEDSIDE TECHNIQUES Etc.

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ACKNOWLEDMENT

First of all I am extremely grateful to **My Family** for trusting and believing in me. Without whom I can't even think of myself.

Special thanks to **Doctor SANA** (TMO MAW KTH) who thoroughly checked every word one by one and pointed out the short comings. Once again thank you so much ma'am for your precious time, you really helped me a lot. (1st edition)

SPECIAL THANKS to **DR. ABDUL BASIT,** my most exacting critic, my closest friend without whom this book would not have been this book.

Special thanks to **Dr. BUSHRA YOUSAF** who helped me a lot in writing the Procedures and reviewing the Book.

Thanks to **NIDA ALAM** pharmacist for helping me a lot in compiling the book.

Gratitude to **Dr. HALEEMA WAZIR**, my junior who compiled the newly added stations in the TOACs.

Thanks to the **Dr. AZHAR HAYAT, Dr. ZOHAIB, Dr. AMMAR ZAHID, Dr. NASEEB, and Dr. SABIR** who always treated me as younger brother and encouraged me at every step.

Thanks to all the Contributors.

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HISTORY Taking

"Always listen to the patient that might be telling you the diagnosis" **(Sir William Osler)**

First of all follow the basic steps

- Approach to the patient in friendly, sympathetic and gentle way
- Greeting + introduce yourself to the patient.
- Take consent + pay full attention to the patient.
- If the patient is eating or doing something (leaving for washroom etc.) wait for the patient or visit later.
- Use the patient own words and don't use difficult medical terminologies.
- First listen to the patient and don't interrupt the patient by asking leading questions.
- At the end you can ask the necessary questions if any to complete the History.

Record the history in the following pattern.

1. Personal profile
2. Chief/presenting complaints (C/C)
3. History of presenting illness (HOPI)
4. Review of systems (ROS)
5. Current medications and Drug history
6. Past medical/surgical History

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7. Personal History
8. Family History
9. Allergy history
10. Travel history
11. Occupational History
12. Menstrual History (Female)
13. Socioeconomic history

1. **PERSONAL PROFILE:**
   a) **Name:** (for identification of the patient say for example XYZ Son/daughter/wife of ABC.it is also possible that in the same ward/chamber two different patients with same name are there. So also ask for the father/husband name for differentiation)
   b) **Age:** (age is much more important because some diseases are more common in certain age group. For example stroke, malignancy, MI, etc. are more common in older group and measles, chicken pox etc. are more common in children)
   c) **Sex:** (some diseases are common in males (myocardial infarction) and some are present in females mostly i.e. SLE, primary biliary cirrhosis)
   d) **Address :** (for further communication and some diseases are more common in one place than the other)
   e) **Religion:**

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f) **Marital status/Habitus: (**unmarried people are mostly in depression, married/habitual may have some sexually transmitted disease.)
g) **Occupation: (**many diseases are commonly related to occupation, and to know about the socioeconomic history of the patient)
h) **Mode of Admission:** admitted through emergency or Pod. Also indicate about the nature of the disease**.**
i) **Date and Time**

2. **<u>CHIEF/PRESENTING COMPLAINTs:</u>**
   The complaints which bring the patient to the doctor.
   <u>Recorded in chronological order i.e. the symptom started first will be written first and so on.</u>
   And along the symptom duration is also mentioned.
   For Example
   1. Abdominal pain…… 12 days
   2. Fever…… 10 days
   3. Nausea / vomiting …… 6 days

Note: use patient own words, no leading questions, recurrent symptoms can be noted

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HISTORY OF PRESENTING ILLNESS (HOPI)

That part of the history in which the chief complaints are elaborated in detail.

It is actually the chronological description of present illness from initial sign to the present.

Elements of HOPI are:

1. Location/site
2. Quality
3. Severity
4. Duration
5. Timing
6. Modifying factors
7. Associated sign and symptoms

For Example:

PAIN (SOCRATES)	FEVER (ODIPARA)
S = SITE	**O** = onset
O =ONSET	**D** = Duration
C = CHARACTER (Sharp/dull, Heaviness, Aching, throbbing, colicky, Gripping,	**I** = intensity (Low Grade or High Grade/ Rigors and chills)

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Burning/tingling, boring/ stabbing, Crushing,	
R = RADIATION	**P** = pattern Continuous/intermittent/ remittent/ hectic/ relapsing
A = ASSOCIATED SYMPTOMS	**A** = Aggravating factors
T =TIMING (DURATION, COURSE, PATTERN)	**R** = Relieving factors
E = EXACERBATING & RELIEVING FACTORS	**A** = Associated factors
S = SEVERITY	

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DIFFERENTIAL DIAGNOSIS:

COUGH:

ACUTE COUGH	CHRONIC COUGH
Inhaled foreign Body	**Nonproductive:** 1. Asthma 2. Allergy 3. Vocal Cord dysfunction 4. COVID 5. GERD 6. Drug related like ACE inhibitors 7. Post nasal drip
Respiratory tract infection	**Productive**: 1. Pneumonia , Sinusitis , Bronchitis 2. TB, lung cancer, pulmonary embolism(all are blood stained) 3. COPD (purulent/mucoid) 4. Bronchiectasis (purulent) 5. Pulmonary edema (pink/frothy)

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ABDOMINAL PAIN

GASTROINTESTINAL + PERITONEUM	GENITOURINARY + GYNAECOLOGICAL	VASCULAR
1. PUD 2. Gastritis 3. Malignancy 4. Volvulus 5. Appendicitis 6. Obstruction 7. IBD 8. Strangulated Hernia 9. Intussusception 10. Cholecystitis 11. Pancreatitis 12. Cholangitis/Hepatitis 13. Diverticulitis 14. Splenic Rupture **15.** Peritonitis	1. UTI 2. Urinary Retention 3. Ureteric Colic 4. Polycystic Kidney Disease 5. Pyonephrosis 6. Ruptured Ectopic Pregnancy 7. Ovarian Cyst Torsion/Rupture 8. Severe Dysmenorrhea 9. Salinities 10. Endometritis 11. Fibroid Red Degeneration etc	1) Mesenteric Angina 2) Aortic Aneurysm 3) Mesenteric Venous Thrombosis 4) Aortic Dissection 5) Embolus (Mesenteric) 6) Colitis

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EXAMINATIONS

- GENERAL PHYSICAL EXAMINATION
- RESPIRATORY SYSTEM EXAMINATION
- ABDOMINAL EXAMINATION
- DIABETIC FOOT EXAMINATION
- THYROID EXAMINATION
- CVS EXAMINATION
- CNS EXAMINATION

GENERAL PHYSICAL EXAMINATION:

First of all, follow the basic steps "**RIPE**"
R=**R**ight side approach
I =**I**ntroduction and consent
P =**P**osition (supine + arm abduction)
E=**E**xposure and **E**xplain the procedure to the patient

FIRST IMPRESSION OR GENERAL APPEARANCE:

First impression of the patient's condition must be deliberately sought, whether patient feels well, mildly ill or severely ill.

POSTURE AND ATTITUDE:

It gives information about patient illness e.g.

- A pt. with severe heart failure prefers to sit propped up because his dyspnea worsens on lying flat

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- A pt. with peritonitis lie down on the back, with two legs bending. (pain and cannot move)
- Squatting position in case of congenital heart disease.
- Severe colicky pain =restless
- In meningitis= neck retraction etc.

CONSCIOUNESS:

Note that pt. is well oriented in time, place and person or alert, confused and drowsy or unconsciousness by assessing level of unconscious by using Glasgow Coma Scale (GCS).

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Behaviour	Response
Eye Opening Response	4. Spontaneously 3. To speech 2. To pain 1. No response
Verbal Response	5. Oriented to time, person and place 4. Confused 3. Inappropriate words 2. Incomprehensible sounds 1. No response
Motor Response	6. Obeys command 5. Moves to localised pain 4. Flex to withdraw from pain 3. Abnormal flexion 2. Abnormal extension 1. No response

- For Example: Brain injury is classified as on GCS
  - Severe= GCS < 8-9
  - Moderate = GCS , 9-12
  - Mild = GCS > 13 or equal to 13

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PHYSIQUE:

Visual impression is made about a pt. height and weight. Both should be measured and compared with ideal body weight and height. Compare the sitting height with arm span and total height.

- **TALL STATURE:** Genetic, Marfan's syndrome, klinefelter syndrome etc.
- **SHORT STATURE:** constitutional, genetic, achondroplasia, cretinism, hypopituitarism
- In achondroplasia arms and legs are short while trunk is normal, so sitting height is more than legs.
- In Marfan's syndrome and hypogonadism arm span is more than double the sitting height.

HANDS:

Many pathologies can be detected from the hands of pt.

Shaking hands with pt. is important to know about the disease like dystrophic myotonia in which patient is unable to let go.

SHAPE:

- Hands adopt special shape in tetany due to carpel spasm
- Short 4th metacarpal in females is seen in Turner's syndrome.

SIZE:

- Hands are large and broad in acromegaly

NAILS:

- **Blue nails**: cyanosis, Wilson's disease, onchronosis

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- **Red nails:** polycythemia, CO poisoning, sometimes normal finding
- **Yellow nails:** yellow nail syndrome, fungal infection, diabetes etc.
- **Brown nails:** Chronic kidney disease
- **White nails with darker rim:** Hepatitis
- **Pale nails**: Anemia, CHF, liver disease
- **Cracked or split nails**: Thyroid disease
- **Brittle nails**: (which can break easily) iron deficiency anemia, PVD, hypocalcaemia etc.

CLUBBING: (Hippocratic nails/fingers)

It is a physical sign characterized by bulbous enlargement of soft parts of terminal phalanges with both transverse and longitudinal curving of the nail.

Also called **watch glass nails**, drumstick fingers, Hippocratic nails

TYPES:

Acute: erythematous
Chronic: non erythematous

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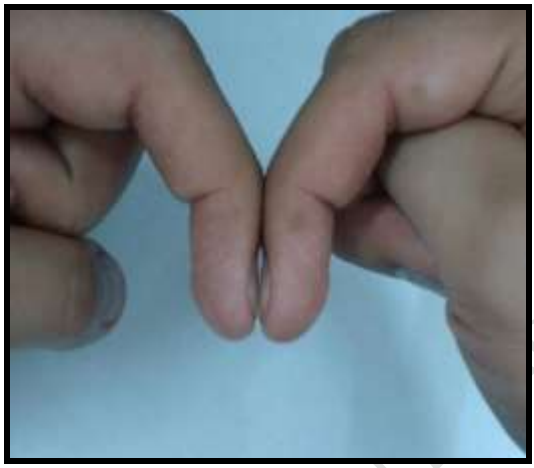

Figure: Normal Schamroth sign

Figure: Clubbing

RESPIRATORY SYSTEM EXAMINATION OR CHEST EXAMINATION

COMMAND: EXAMINE FROM THE FRONT FOR CHEST OR RESPIRATORY SYSTEM

First of all, follow the basic steps "**RIPE**"
R=Right side approach
I =Introduction and consent
P =Position (supine + arm abducted)
E=Exposure & explain the procedure.

Exposure:

Take off the shirt in male and maintain privacy in females or do it in presence of female colleague or nurse

Position:

While examining from the front patient should lie supine with arms abducted or patient lying at an angle of 45.

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INSPECTION

Inspect the front and sides from the foot end. Note for the following

- Shape and symmetry of chest
- Look at the face for SOB, cough and cyanosis
- **Respiratory rate counting** (missed by most of the students)
- Type of respiration
- Prominent veins
- Any scars
- Deformity
    - Pectus carinatum (pigeon chest)

- Pectus excavatum (funnel chest)
- Harrison's sulcus

- Any striae
- Note any wheezing
- Flail rib
- Any mass
- Chest recession or retractions
- Observe the surrounding i.e. any nebulizer, medicine etc. (accessory equipment)

RESPIRATORY RATE:

Count the respiratory rate for one complete minute (IMP)

Age	Normal RR (breaths/min)	Tachypneic (breaths/min)
0-2 months	Up to 59	60 or >60
2 months - 1 year	Up to 49	50 or > 50
1-5 years	Up to 39	40 or > 40
> 5 years	15-20	>20

NOTE: count the RR in inspection as it is noted by examiner especially in peads.

MOVEMENT OF CHEST:

- Reduce movements in:
  1) Pleural effusion
  2) Collapse, fibrosis
  3) Consolidation
- Abnormal Movements: airway obstruction i.e. Emphysema, asthma etc.

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TYPES OF BREATHING:

- **Thoracoabdomina**l: normal in females
- **Abdominothoracic**: normal in males and children
- **Periodic breathing**: in babies (breath fast several times and then have a brief rest for less than 10 sec.)
- **Acidotic breathing**: renal failure and ketoacidosis
- **Cheyne-stokes breathing**: over ventilation alternates with complete apnea i.e. LVF, Inc ICP, narcotic overdose

PALPATION

While starting palpation

1) **Warm your hands.**

2**) Ask about pain and tenderness (missed by most of the students)**.

1. PALPATION OF TRACHEA:

The patient should lie straight. Trachea can be palpated in the following two position.

1) Either remove the pillow from the pt. head
2) Ask the pt. to extend the neck and look backwards or toward the roof.

Trachea can be palpated by one, two or three finger method.

Ideally, we use three finger method to note any deviation of trachea.

Stabilize middle finger in midline and put other fingers around the midline in space and note any deviation as shown in the fig.

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Normally trachea is somewhat towards the right side but not so much palpable….we consider it in the center as normal.
Conditions which:

- **Pull the trachea**: collapse, fibrosis, agenesis of lungs etc.
- **Push the trachea**: pneumothorax, pleural effusion (Air+ water), Kyphoscoliosis.

2. CHEST EXPANSION:

Grasp the sides of the chest with the fingers in such a way that the thumbs of both hands approximate in the midline as shown below. Now ask for deep breath and note any abnormality or symmetry.

Causes of Reduced chest movements:

UNILATERAL	BILATERAL
Pleural effusion and pneumothorax	Emphysema
Chest trauma	Hydrothorax
Fibrosis of lung	Bronchial asthma
Consolidation	Myasthenia gravis
Chest trauma	Obesity

After palpation with hands you can also check and measure the chest expansion with measuring tape.

3. VOCAL FREMITUS:

Place the edge of hand on the chest horizontally and ask the patient to say 1, 2, and 3 and compare both sides.
NOTE: examine the whole chest i.e. interiorly, laterally and posteriorly.

CAUSES:

DECREASED:

- Pneumothorax
- Pleural effusion
- COPD

INCREASED:

- Pneumonia
- Pulmonary fibrosis
- Tumor

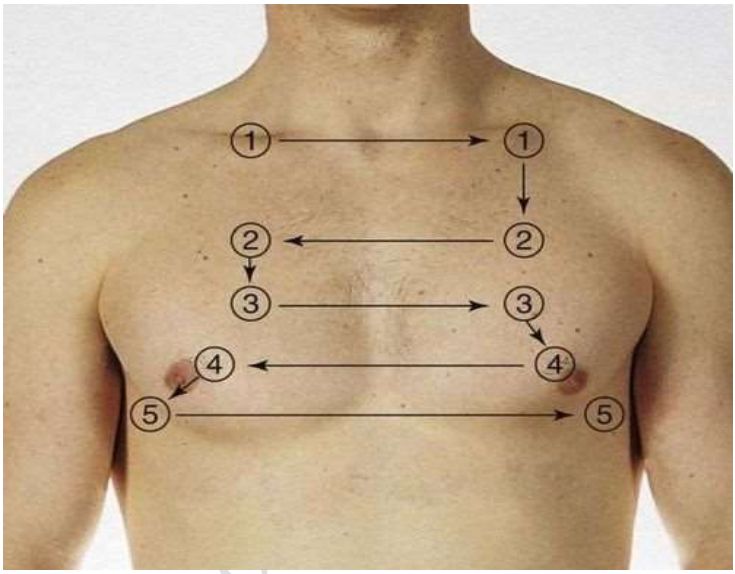
4. APEX BEAT:

Localize the apex beat and note any shift i.e. towards right or left or in normal place.

PERCUSSION

Percuss all the lobes of lung and compare both sides.
Follow the pattern as shown in the fig below.

Right lung has three lobes i.e. upper middle and lower lobe and left lung has two lobes upper and lower. Left middle lobe is called lingula.



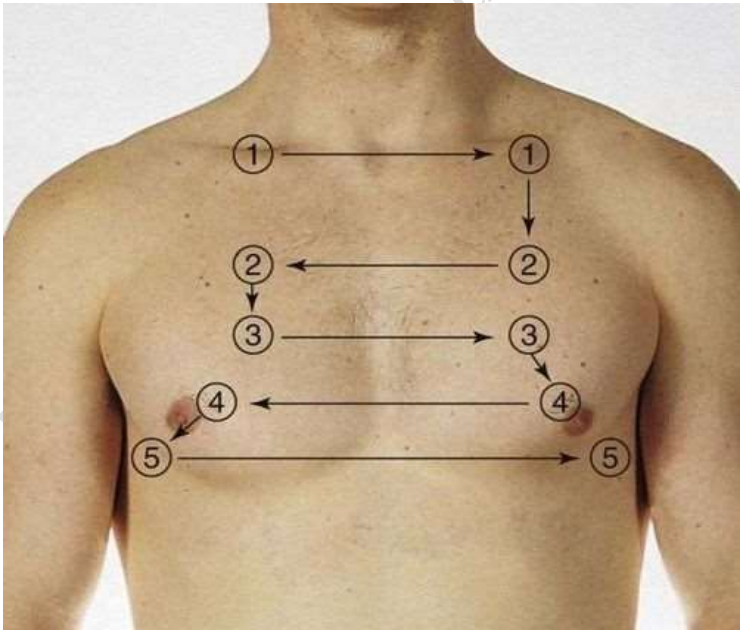
Note: while percussing it is ideal to percuss and auscultate in the intercostal spaces in lean person and in any region in obese patient.
Start from the apex i.e. percuss the apices of the lung in supraclavicular fossa and then from 2nd to 6th intercostal spaces in front, and from 4th to 7th on lateral sides.
Resonant sounds= normal (loud and low pitched)
Hyper resonant =pneumothorax, asthma or emphysema (very loud, low pitch and longer in duration)
Tympanic= empty stomach (over gas filled spaces. loud and high pitch)
Impaired note= fibrosis

Dull note= collapse + consolidation + Obesity (pneumonia, hemothorax)
Stony dull= pleural effusion and empyema

IMPORTANT:
Always use the one or two fingers **and movement should entirely at wrist and not at the elbow**. And always compare both sides at every step.

AUSCULTATION

Steps are the same as percussion. Auscultate the apices of the lung and then from 2nd to 6th intercostal space anteriorly. From axilla to 8th rib laterally and ask to breath.



Asses the type of breathing.

Normal= vesicular breathing

Harsh = bronchial breathing

Added sounds (wheezes, crackles etc.)

- **VOCAL RESONANCE:** similar to vocal fremitus but is heard with stethoscope and ask the patient to say 3, 3, 3(teen teen teen) and note resonance.

Causes: same as vocal fremitus

Vesicular Breathing	**Bronchial Breathing (tracheal)**
Inspiration > expiration	Expiration > inspiration
No pause b/w Inspiration & expiration	Pause in between
Rustling sound (soft light sound)	Blowing character/ high pitched
Normal sound	Seen in pneumonia, heart failure, COPD

CRACKLES (Clicking, rattling or cracking sound…i.e. like the take tak of clock**)**

FINE CRACKLES	**COARSE CRACKLES**
Inspiration > expiration	Expiration > inspiration

No pause b/w inspiration and expiration	Pause in between
Rustling sound (soft light sound)	Blowing character (sound)
Low pitched	High pitched
e.g. pulmonary fibrosis, CCF	e.g. Bronchiectasis

Note: Crackles that do not clear after cough usually indicate pulmonary edema or fluid in alveoli due to ARDS or heart failure.

- Crackles that partially clear or change after cough may show bronchiectasis ….

WHEEZES: "High pitched, coarse whistling sound heard during breathing".

i. Wheezes during **expiratory phase** shows bronchiolar disease.

ii. Wheezes during **inspiratory phase** shows stenosis caused by tumor, foreign bodies or scarring. Also occurs in hypersensitivity pneumonitis.

STRIDOR: (MUSICAL BREATHING)

Special type of wheeze, harsh, high pitched and vibrating sound

- **Inspiratory**, which occurs when breathing in, and indicates a blockage above the vocal cords. E.g.

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croup, epiglottitis, laryngomalacia, vocal cord paralysis,

- **Expiratory**, which occurs when breathing out, and indicates a blockage in the windpipe. E.g. tracheal stenosis, anaphylaxis, bacterial tracheitis etc
- **Biphasic**, which occurs when a person breathes in and out, and indicates narrow cartilage directly below the vocal cords. e.g. Foreign body, hemangioma, mass or tumor.

Pleural friction rub	Crackles
Is biphasic	Either inspiratory or expiratory or both
Usually localized to a small area	Widespread
No change after coughing	May clear after coughing
Often palpable	Usually nonpalpable
Pressure of stethoscope intensify the sounds	No effect
Associated with pleuritic chest pain or local tenderness	No pain or tenderness

- **Properly cover the patient**
- **Thank the patient**

IF THE COMMAND IS:
EXAMINE THE PATIENT FROM THE BACK FOR CHEST EXAMINATION
Same steps i.e. RIPE

Position: while examining back of the patient take off the shirt and make the position which is most suitable to you. Ask the **patient to sit with arms crossed anteriorly.**

INSPECTION:
Same as that from front, also look for kyphosis, scoliosis or Kyphoscoliosis etc.

PALPATION:
Always ask for tenderness and pain.
While palpating apices of the lungs place the four fingers from behind in the supraclavicular fossa and thumb stretched behind the neck.
Rest of the palpation is same as that of palpation from front but no apex beat.

PERCUSSION & AUSCULTATION:
Same as from the front side.

- Cover AND thank the patient.

- **NOTE: IF THE COMMAND IS:**
  EXAMINE THE PATIENT FOR THE CHEST EXAMINATION THEN PERFORM ALL THE STEPS i.e. BOTH FROM THE FRONT AND BACK ALONG WITH RELEVANT

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SECTION 2: FLUID ANALYSIS

1. CEREBROSPINAL FLUID
2. ASCITIC FLUID
3. PLEURITIC FLUID
4. URINALYSIS

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CEREBROSPINAL FLUID (CSF) ANALYSIS:

CSF is a clear, colorless body fluid found in brain and spinal cord produced by specialized ependymal cells in choroid plexus of the ventricles of the brain.

CSF analysis is a group of tests that evaluate substances in CSF in order to diagnose conditions affecting the brain and spinal cord (CNS).

TOTAL VOLUME = 100-150 ml

DAILY SECRETION = 400-450 ml

Diseases are widely divided into four categories;

- **Infectious disease** : meningitis , encephalitis
- **Bleeding** with in the skull or brain
- **Autoimmune disorders**; GBS , MS , sarcoidosis
- **Tumors of CNS**

PHYSICAL PROPERTIES OF CSF:

AMOUNT: Normally suitable amount for CSF analysis **= 2-5ml**

PRESSURE:

Measurement of pressure during collection i.e. during starting and closing the collection.

Normal pressure = 50-250 mm of water

Increased = tumors, infection, hydrocephalous or bleeding (SAH)

Decreased = dehydration, shock or leakage of CSF (sinus fracture)

COLOUR: Normally CSF is clear and colorless.

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Color	Cloudy	Clear	Straw/cloudy /yellow	Blood stained(red)	Clear
Present in	Bacterial meningitis	Viral meningitis	Tuberculosis meningitis	Subarachnoid hemorrhage or trauma during procedure.	Multiple sclerosis

CHEMICAL TESTS:

CSF GLUCOSE:

- Normally **= 2/3rd of blood glucose**
- **Decreased** (bacteria usually eat sugar so glucose decreases in) = bacterial meningitis (even up to 0 in severe cases) and somewhat in tuberculous meningitis below 40mg/dl
  - **Normal** = SAH , viral, MS

CSF PROTEIN:

- Normal = < 0.45g/L (20-45mg/dl) adults
- In newborn = 120-160 mg/dl are normal
  - Increased = increase in all conditions except in viral and MS which may be normal/increased
- **CSF LACTIC ACID :**

Increased = bacterial and fungal meningitis
Normal in viral meningitis

- **CSF LDH :**

Normal In = viral meningitis
Increased in = bacterial meningitis, leukemia, stroke

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MICROSCOPIC TESTS:

- **RBCs :** normally not present or 0-2 are normal
- If present more than 2 then it shows SAH or trauma during procedure. Also increase in herpes virus due to vascular involvement
- **WBCs : normal** = 0-5 cells with 60 to 70 % lymphocytes (adults)

  Neonates = up to 30 cells are normal

  Increased in infections etc.
  - **Bacterial meningitis** = from 100-60000+ with neutrophils predominant
  - **Viral meningitis** = 10-100 with lymphocytes predominant
  - **Tuberculous meningitis** = 10-500 first neutrophils predominate then lymphocytes
  - **Fungal meningitis** = monocytes predominate

TESTS FOR INFECTIONS:

- CSF Gram Staining and C/S
- PCR For Virus Detection

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Proteins mg/dl	Glucose mg/dl	Colour	Pressure	CONDITIONS
20-45mg/dl in adults in newborn 120-160 mg/dl	2/3rd of Glucose	Clear	50-250 mmH2O	NORMAL
100-500	Decreased even up to zero	Cloudy(depends on microorganism numbers)	Normal /increased	BACTERIAL MENINGITIS
100-3000	Decreased up to 35mg/dl	Straw/yellow	Normal/ increased	TUBERCULOUS MENINGITIS
20-100	normal	clear	normal	VIRAL MENINGITIS
20-100	Normal	Reddish pink	Normal	SAH
High	Dec	--	Increased	FUNGAL

LACTIC ACID	LDH	Leukocytes	Races
--	--	0-5=adults Up to 30 =neonates	0-2 cells
Increased	Increased	100-1 lac mostly neutrophils	--
Increased	Increased	10-500 mostly lymphocytes	--
normal	normal	10-150 mostly lymphocytes	--
--	--	--	Increased
Increased	--	Lymphocytes predominate	--

SECTION 3

- ABGs
- DRUGS
- POISONS

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Arterial Blood Gases (ABGs):

INDICATIONS:

- Respiratory failure
- Cardiac failure
- Renal failure
- Liver failure
- Hyperglycemic state associated with DM
- Sepsis
- Burns
- Poison/toxins
- Ventilated patient

CONTRAINDICATIONS:

ABSOLUTE:

- Abnormal Allen test (no collateral blood flow to the hand)
- Local infection
- Distorted anatomy at puncture site
- AV fistulas
- Severe peripheral vascular disease of limb involved

RELATIVE:

- Severe coagulopathy
- Anticoagulant therapy i.e. warfarin
- Use of thrombolytic agents i.e. streptokinase etc.

In ABGs we see the

- **PH**
- **$PaCO_2$**
- **Bicarbonate**
- **Anion gap**

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- **Alveolar-arterial oxygen gradient (A-a)**
- **PaO_2**

	Normal	Acidotic	Alkalotic
PH	7.35-7.45	< 7.35	>7.45
Paco2	35-45 mmHg (4.7-6.0 kPa)	>45	<35
Hco3	22-26mEq/L	<22	>26
Pa02	80-100 mmHg	-	-
Base excess (surrogate marker of metabolic acidosis or alkalosis)	-2 to +2 mmol/L	-2mmol/L shows that there is lower than normal amount of HcO3 in blood due to primary metabolic acidosis or compensated respiratory alkalosis	+2mmol/L (either due to primary metabolic alkalosis or compensated respiratory acidosis)

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SECTION 4

- INSTRUMENTS
- X-RAYS
- ECG

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INSTRUMENTS

- NG TUBE
- FOLEY'S CATHETER
- IV CANNULA
- INSULIN SYRINGE
- LP NEEDLE
- ETT
- PEAK FLOW METER
- INHALERS (MDI + DISKUS)
- SPACER
- VENTURI MASK
- OROPHYRANGEAL AIRWAY
- NASOPHARYNGEAL AIRWAY
- INTEROSSEUS CANNULA
- TRUCUT BIOPSY NEEDLE
- BLOOD SAMPLE TUBES
- BONE MARROW BIOPSY NEEDLE (jamshidi needle)
- PLEURAL BIOPSY NEEDLE (Abram's needle)
- CENTRAL VENOUS LINE
- MONOPTY GUN
- AMBO BAG
- NEONATAL BP CUFF

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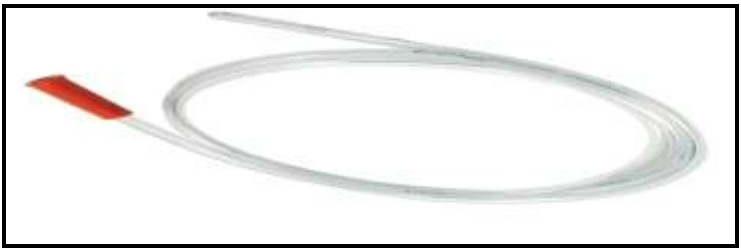
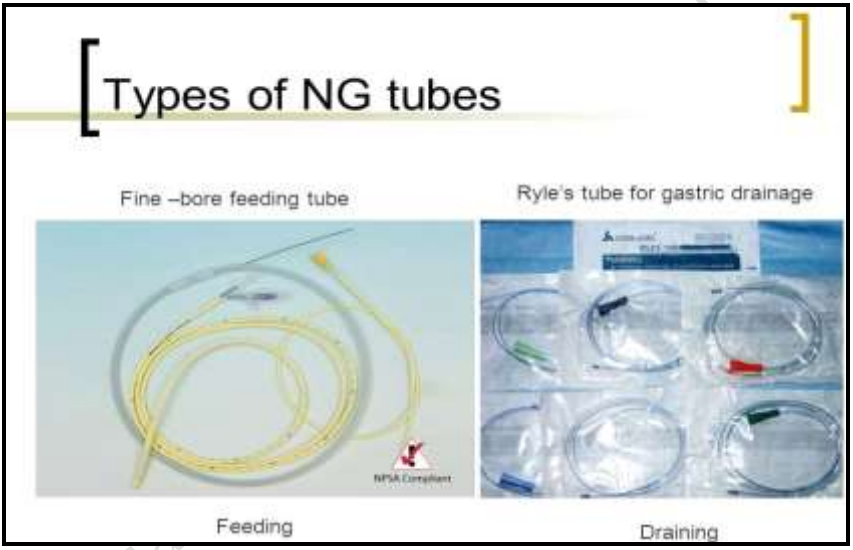




NG TUBE (NASO-GASTRIC TUBE)

TYPES: 1.Ryle's tube 2. Levine's tube

INDICATIONS:

- Feeding
- Gastric lavage as in poisoning etc.
- Administration of medications
- Aspiration of gastric content for diagnostic purpose

- Stomach decompression as in obstruction etc.
- Enteral nutrition
- Prolonged ileus
- UGI bleeding confirmation

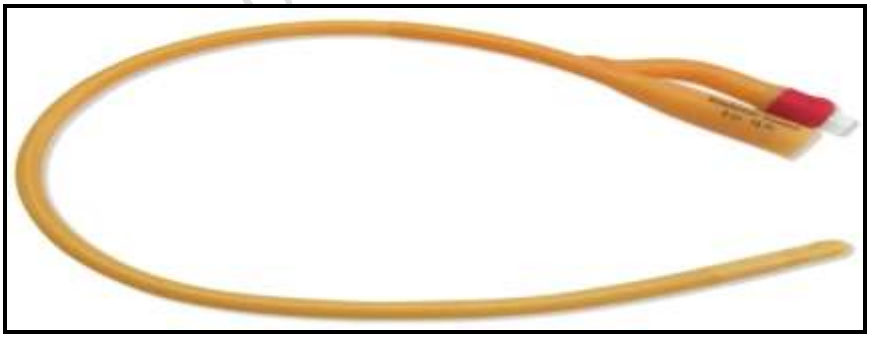
CONTRAINDICATIONS:

- Midface injury and basilar skull fracture (b) Hx of gastric bypass
- Hx of acid/alkali ingestion (d) Esophageal strictures
- Coagulopathy

COMPLICATIONS:

a) Bleeding (b) Perforation (c) Wrong placement
d) Pneumothorax (e) aspiration
(f) vomiting/retching

SIZES: 12–18 French (fr) in adults, In neonates 8-10 fr, in infants and children less than 5 years = 8-12 fr



OSCE (2nd Edition)

URINARY CATHETHER (FOLEY'S catheter)

i. TYPES: Materials: silicon and rubber

Procedure: double lumen and triple and others shown in fig.

INDICATIONS:

THERAPEUTIC	DIAGNOSTIC
1. Comatose patient	Renal function tests
2. Urinary incontinence	Residual volume
3. Urinary retention	Radiographic

	contrast studies
4. Intravesical chemotherapy	
5. In all perineal operations 6. In Cerebrovascular accident	

CONTRAINDICATIONS:

1. Acute urethritis	2. Blood at meatus
3. Urethral trauma	4. Scrotal hematoma
5. High riding prostrate	

COMPLICATIONS:

Trauma & hemorrhage	UTI
False passage , tube blockage	Fistula formation

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CHEST X-RAYS (CXR)

IDENTIFICATION: First of all look for
1) Name (2) Date

Type of film:

- **Position**: PA view, AP view, lateral view,
- lateral decubitus (for sub pleural effusion and when pleural effusion is less or doubtful)
- **Direction**: upright etc

PA VIEW	AP VIEW
• Apex of lung above the clavicle due to abduction of arm	Apex of the lung below the clavicle
• Body of scapula visible (scapula move out)	Not visible
• Heart size is normal	Comparatively appears bigger
• Chin not visible	Chin visible
• Posterior ribs appears more superficial as compared to anterior ribs	Not so
• Not marked as PA	Usually marked as AP

Technical quality: "RIP"

R= Rotation (the clavicular ends must be at equal distance from the spinous process (vertebral spine shadow) (tear drop)

- **I= Inspiration** (the CXR must be taken in full inspiration and 6th anterior rib must pass through the mid of Right .hemi diaphragm)
- **P= Penetration/exposure** (draw a horizontal line through the most concave part of cardiac shadow.

NORMAL EXPOSURE:

Vertebrae should be visible above and disappear as we move down the film i.e. not all vertebrae are visible means Visible in cervical region only, slightly visible in chest region and disappears below the diaphragm.

OVER-EXPOSURE:

If whole of vertebral column is visible.

Look at the big picture

MEDIASTINUM:

Divisions:

Superior and inferior (divided by horizontal line passing through the angle of Louis)

Anterior, middle, posterior

SUPERIOR MEDIASTINUM:

Trachea, Esophagus, Thymus (up to 8 to 18 months of age)

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INFERIOR MEDIASTINUM:

Heart, Lungs, Wide mediastinal shadow = **HOTS**

H= Histiocytosis

O= Onco i.e. carcinoma lymphoma etc.

T = TB, thymus

S= Silicosis

HEART:

LOCATION:

- 1/3rd to the right
- 2/3rd to the left (normal)

BORDERS:

- **Right border**: by right atrium and IVC
- **Left border:** left ventricle and some of left atrium
- **Inferior border:** left and right ventricle
- **Superior border:** right and left atrium and the great vessels.
- **SIZE: Normal cardiothoracic ratio (CTR) = < 55%**
  Cardiomegaly = >55% of CTR

Transthoracic diameter (TTD) or CTR:

- Draw a horizontal line passing just above the dome of the right diaphragm. (label it as A)
- Draw a perpendicular line in the midline

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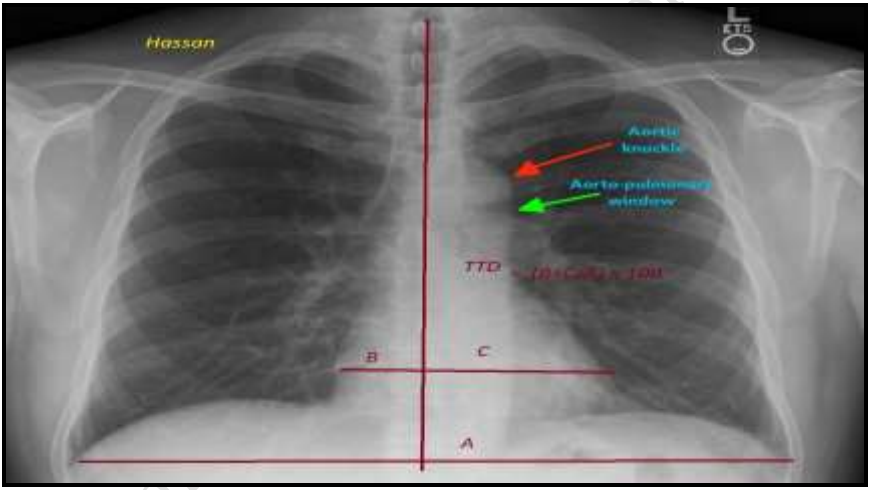
- Draw a horizontal line from the most concave part of the heart on the right side toward the midline. (label it as B)
- Draw the same line but from the left side of the heart. (label it as C)

FORMULA

TTD = (B+C/A) x 100



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SECTION 5

PROCEDURES

- Nebulization
- Neonatal resuscitation
- IV Cannula
- NG tube insertion
- Female Catheterization
- Male Catheterization
- CPR

- **COUNSELLING**
- **EPI SCHEDULE**
- **ADMISSION CRITERIA FOR NURSERY**
- **GYNAE & SURGERY INSTRUMENTS**

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PROCEDURES

NEBULIZATION:

Apparatus:

1) Mask
2) Chamber
3) Tubing
4) Nebulization machine

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Dose:

- 0.5 ml Ventolin + 0.5 ml normal saline (If child is < 1 yr)
- 1 ml Ventolin + 1 ml normal saline (If child is > 1 yr)
- Standard dose: 1:1 but, in clinical practice 2.5ml normal saline is used for 0.5 ml Ventolin (0.5ml Ventolin= 16 drops)
- Normal saline is hypertonic for airway=> oozes out fluids
- In bronchiolitis=> only normal saline is used for nebulization
- Ventolin nebulization include 3 to 4 nebulization's at one time with a break of 10- 15 minutes
- Anticholinergics are used in a child with congenital heart disease in place of Ventolin.
- Betamethasone is used for nebulization when there is severe inflammation

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COUNSELLING

MEDICAL COUNSELLING STEPS

- Introduce yourself and confirm the disease and patient (ask his name)
- Take permission for counselling (in front of the attendant or in separate room)
- Ask the pt. about his/her education, and knowledge about his/her disease?
- Ask the pt. whether he/she is counselled before or not?
- Ask the pt. complaints very briefly?
- Describe the disease.
- Pathology -> signs and symptoms
- Investigations
- Diagnosis
- Treatment modalities available
- Describe/explain drugs, duration, adverse effects.
- Compliance to drugs and follow up.
- You can ask any question if you have
- Say thanks to patient.

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❖ السلام وعلیکم!!!

1. میرا نام ڈاکٹر XYZ ہے۔اور میں ڈاکٹروں کے اس ٹیم کا حصہ ہوں جو آپکے بچے کا علاج کروا رہی ہے۔
2. آپ اس مریض کے والد صاحب ہے؟ جس کو یہ بیماری ہے۔
3. میں آپ کے بیٹا/بیٹی کے بیماری کے بارے میں کچھ باتیں آپ سے کرنا چاہتا ہوں تو سب کے سامنے آپ سننا پسند کریں گے یا اکیلے میں۔
4. آپ کی تعلیم کتنی ہے۔اور آپ اپنے مریض کے بیماری کے بارے میں کیا جانتے ہیں۔
5. اب میں آپ کو آپ کے مریض کے بارے میں بتاؤں گا۔آپ کے مریض کو جو بیماری ہے اسکا مطلب ہے۔"بخار کے ساتھ جھٹکے لگنا بغیر دماغی انفیکشن کے" انگلش میں اسے Febrile fits کہتے ہیں۔

✓ اس میں بچوں کو بخار کے ساتھ جھٹکے کا خطرہ ہوتا ہے۔ہر 100 میں تقریباً 5-2 بچوں میں یہ ہوتا ہے۔دماغی طور پر عموماً بالکل ٹھیک ہوتے ہیں۔

✓ عموماً بخار کے ساتھ جھٹکے 18 سے 24 ماہ کی عمر میں پڑ سکتے ہیں۔لیکن ضروری نہیں کہ یہ 24-18 کے درمیان میں ہو بلکہ 6 ماہ سے 5 سال کے درمیان آسکتے ہیں۔

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❖ بخار میں جھٹکے دو طرح کے ہوتے ہیں۔ 1.Simple 2.Complex

1. یہ جو Simple ہوتے ہیں سب سے زیادہ پائی جانے والی قسم ہے۔اور صرف ایک 15-10 منٹ کا جھٹکا ہوتا ہے۔اور پورے جسم پر ہوتا ہے۔ (Generalized)
2. Complex جو ہے وہ جسم کے ایک خاص حصے (Focal) میں مسلسل 24 گھنٹے ہوتا ہے۔یا بار بار آتی ہے۔بچہ کو عارضی طور پر بازو یا leg میں جھٹکے کے بعد کمزوری محسوس ہوتے ہیں۔

❖ Febrile Fits کے مختلف اسباب (Causes) ہیں۔1۔ Infection 2-Immunization (MMR) 3- Family Hx 4۔ 5۔ Malaria پیٹ کی خرابی

❖ Febrile Fits کے علامات کچھ ایسے ہوتے ہیں۔بخار کے پہلے دن ہی جھٹکا آتا ہے جو اس بات کو ظاہر کرتا ہے کہ بچہ بیمار ہے۔زیادہ تر جھٹکا اس وقت آتا ہے ج 102.2 °F (39. °C) سے زیادہ ہو جائے۔

❖ مندرجہ ذیل بچوں میں یہ بار بار ہو سکتا ہے۔

❖ تقریباً 35-30 فیصد میں ایسا ہو سکتا ہے۔

1. 15 ماہ سے کم عمر میں پہلا جھٹکا آیا ہو۔
2. بار بار بخار ہونا۔

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3. Family Hx

4. جھٹکے سے پہلے Low grade fever ہونا۔

5. اگر بخار شروع ہوتے ہی جھٹکے لگے ہو۔

❖ اگر کسی بچے میں مندرجہ ذیل وجوہات میں سے دو یا دو سے زیادہ موجود ہو تو مرگی (Epilepsy) کے 10 فیصد چانس آنے والے میں ہو سکتے ہیں۔

1. اگر جھٹکوں کا دورانیہ 15 منٹ یا اس سے زیادہ ہو (Complex)

2. اگر جھٹکے ایک سے زیادہ مرتبہ لگے ہو۔

3. اگر جھٹکے جسم کے صرف ایک حصے میں ہوئے ہو۔

4. اگر بچہ ذہنی طور پر ٹھیک نہ ہو۔

❖ پہلی مرتبہ جھٹکے لگنے کی صورت ڈاکٹر مریض کے کچھ ٹسٹ کریں گے جس سے مرض تشخیص میں مدد ملے گی۔

❖ علاج:-

❖ گھر پر علاج:۔ 1۔ تیز بخار کی صورت میں بچے کے کپڑے کم کر دے۔

2۔ گرمیوں کے موسم میں اسے ٹھنڈی جگہ پر رکھیں۔

3۔ بخار والا شربت ہر 6-4 گھنٹے بعد پلائیں۔

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4۔ اگر کا جھٹکے کا دورانیہ 5 منٹ سے زیادہ ہو۔ تو پاخانے کے راستے سے Valium (Suppository) کی بتی اسے دیں یا فوراً ہسپتال لے جائیں۔

5۔ اگر جھٹکوں کا دورانیہ 10 منٹ سے زیادہ ہو تو فوراً ہسپتال لے جائیں۔

6۔ عموماً لمبے عرصے کے لئے دوائی ایسے جھٹکوں میں زیادہ دیر تک فائدہ نہیں دیتی۔ تاہم بخار شروع ہوتے ہی Valium کی بتی پاخانے کے راستے صبح و شام 3 سے 4 دن تک دی جاسکتی ہے۔

- مزید کچھ معلومات درکار ہو تو مجھ سے پوچھ سکتے ہیں۔

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INSTRUMENTS GYNAE AND SURGERY

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BOWL
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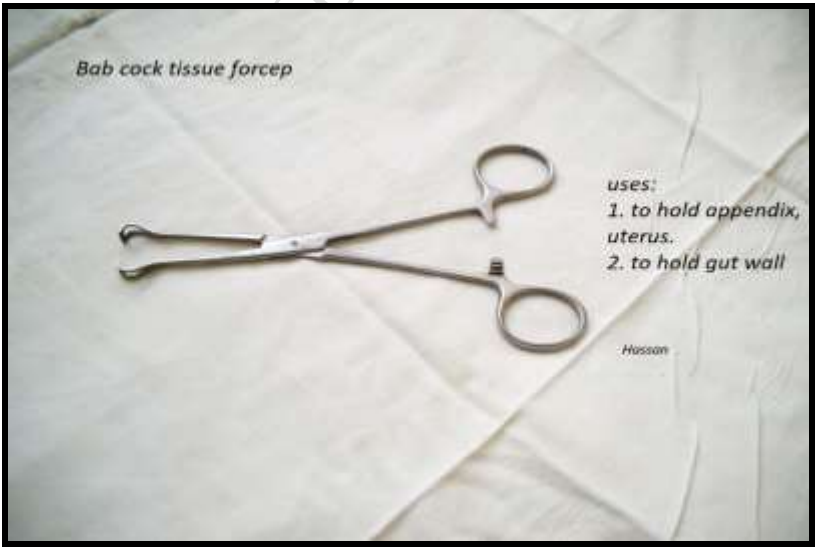
Bab cock tissue forcep
uses:
1. to hold appendix, uterus.
2. to hold gut wall
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