CHEST EXAMINATION

BY

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VALUE OF GENERAL EXAMINATION IN A PATIENT WITH CHEST DISEASE

General Examination

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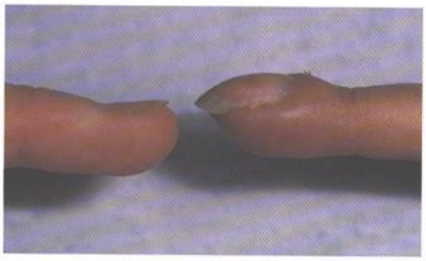
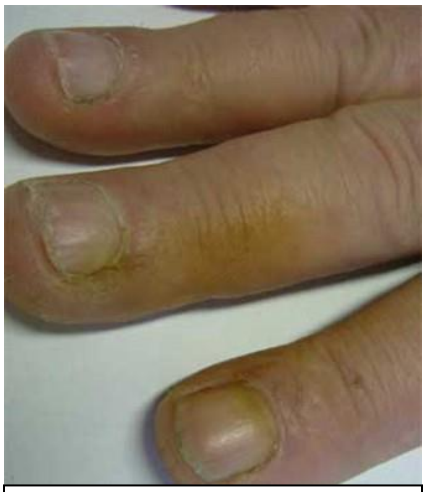
1) **Hand:** Look for



- Finger clubbing
  (E.g. in bronchiectasis & idiopathic pulmonary fibrosis
- Nicotine staining
- Peripheral cyanosis
- Skin changes (thick skin & sclerodactyly in scleroderma or thin skin (steroid use) in the dorsum of the hand)
- Deformity & synovitis (e.g. Rheumatoid hand)
- Muscle wasting (malignancy)
- Warm hands (CO2 retention)
- Fine tremors (B2 agonist use)
- Flapping tremors
- Count pulse & respiratory rate RR
- Normal RR: 12 - 20
- Tachypnea is so important sign of respiratory distress in a patient with chest disease

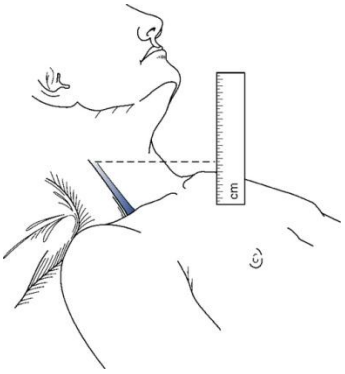


Nicotine staining

2) **Face**

- Eyes:
  - Examine for red eyes in chronic cough, uveitis in sarcoidosis
  - Examine for pallor & Jaundice
  - Plethoric face (in secondary polythycemia due to chronic hypoxia as in COPD)
  - Moon face (cushioned) in patients taking steroids like ILD & Asthma
  - Rash: lupus pernio in sarcoidosis
  - Scleroderma face (tight skin, pinched nose, small mouth (fish like) & with lack of expression)

- Mouth:
  - central cyanosis under the tongue in respiratory failure (prominent in the face in Acute severe cases)
- JVP:
  - high JVP is an important clue for pulmonary hypertension
  - All chronic lung diseases (both obstructive like COPD and restrictive like interstitial lung disease might lead to Cor pulmonale & pulmonary HTN)



N.B:
Congested non pulsating Neck veins together with edematous face, bilateral UL edema and dilated veins over the chest wall ---> highly suspicious of **SVC obstruction**

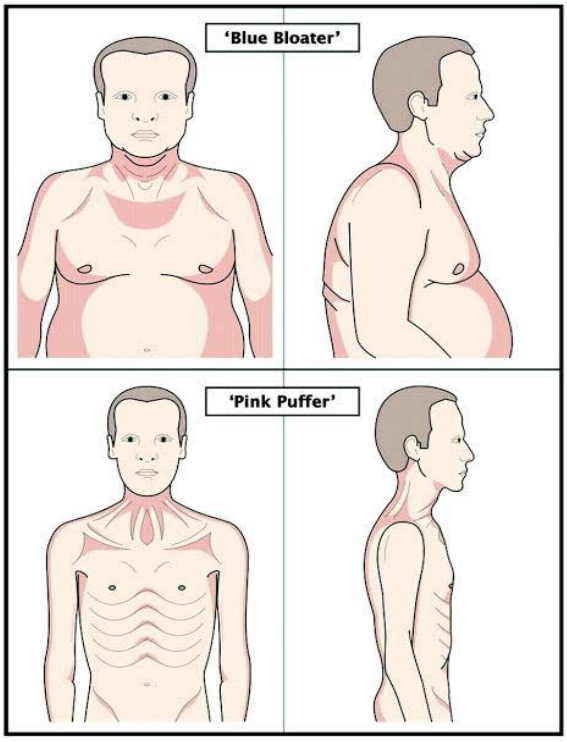
3) LL :

- Examine for pitting LL edema (Bilateral in cases suspected to have cor pulmonale & pulmonary HTN)
- Unilateral in cases suspected to have pulmonary embolism

☞ **Note that:**

Don't forget to make a general survey of the patient including

- His body built (morbid obese e g Pickwickian & OSA)
- Cachectic in Malignancy & TB
- Distressed or lying comfortable in bed
- Any nebulizers , inhalers , ventilators , O2 masks , excessive use of wipes due to excessive phlegm production as in bronchiectasis



☞ **Special decubitus & appearance**

- Tripod position in cases of severe COPD
- Accessory muscle use & intercostal retractions in respiratory distress
- Blue bloaters = Chronic bronchitis
- Pink puffers (Emphysema)

HOW TO DO LOCAL EXAMINATION OF THE CHEST!!

♦ **Good exposure with covering of other areas**

I. INSPECTION:

Inspect the chest for:

A) Deformities like

- Pectus excavatum & carinatum
- Kyphosis & kyphoscoliosis

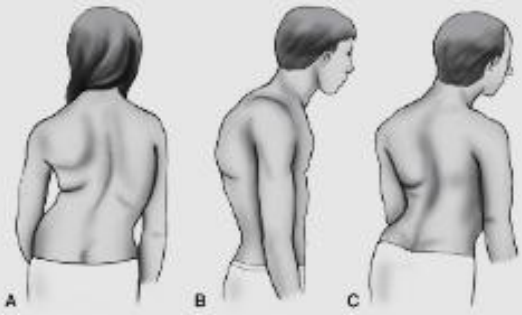
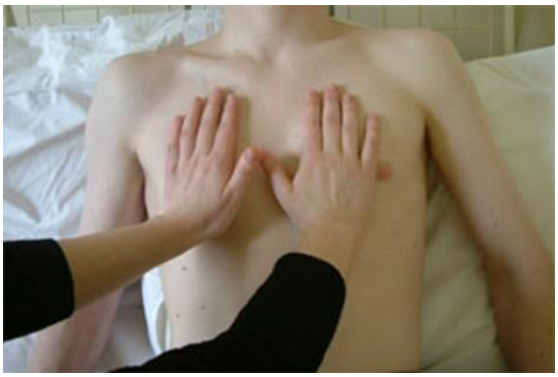


FIGURE 5-11 Examples of chest cage abnormalities. **A,** Scoliosis. **B,** Kyphosis. **C,** Kyphoscoliosis.

B) Scars

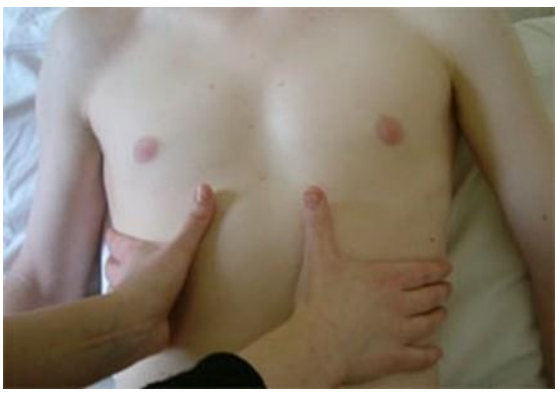
- Look for Pneumonectomy or lobectomy scars
- Scars for previous intercostal tubes or current tube insertion

C) Inspect the location of the **apex of the heart**



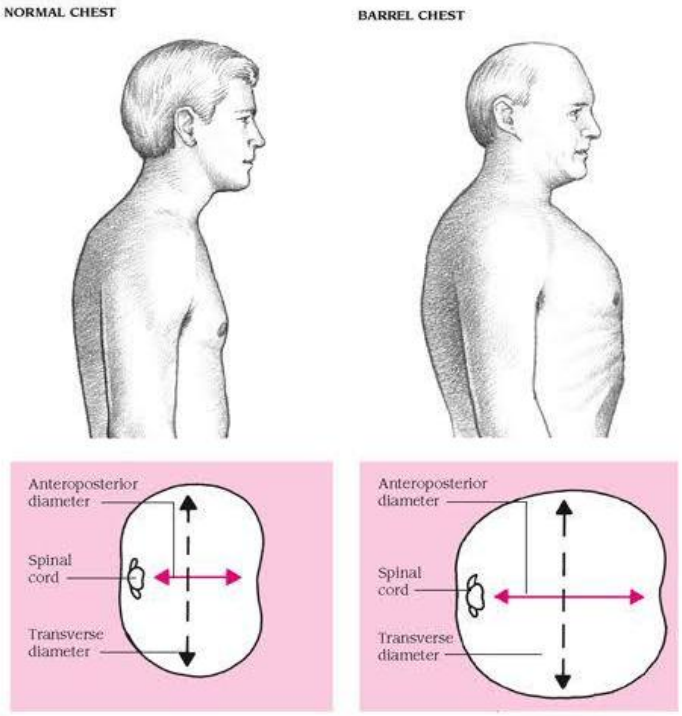
D) Chest expansion :

- Test for expansion in 3 regions
  - Supra-mammary
  - Mammary
  - Infra-mammary regions
- Chest expansion is decreased bilaterally in diseases affecting both lungs like COPD & ILD
- While it is decreased in one side , if there is localized lung pathology affecting such lung like collapse & effusion



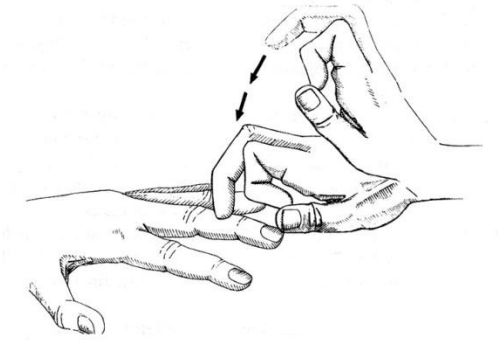
E) Note the **Anteroposterior Diameter** in relation to **Transverse Diameter**

- Normally, transverse diameter is more than AP diameter
- If antero-posterior diameter is almost equal to transverse diameter, it is barrel shaped chest of COPD!!



II. PERCUSSION

☞ Percuss each region and keep your hand in the midclavicular line , in such manner



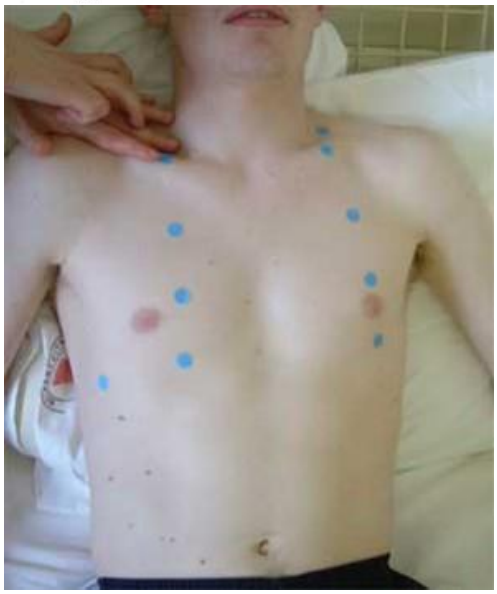
Apex, clavicles,

1 - supra-mammary

1- Mammary

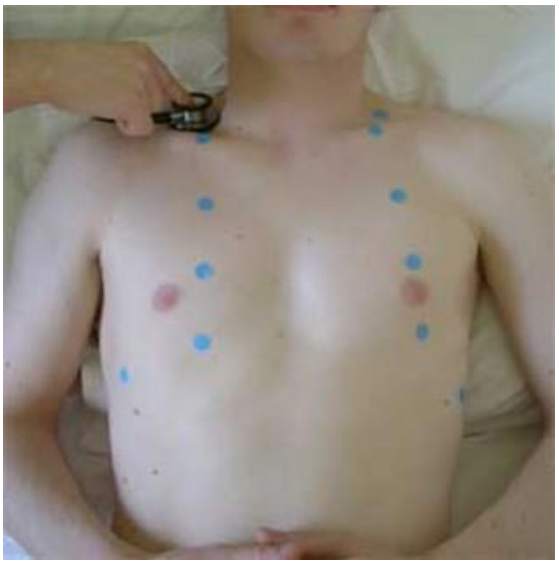
2 - infra-mammary

Axilla: 3 regions (upper, middle and lower)



- Normal percussion note: resonant
- COPD: bilateral hyperresonance
- Pneumothorax: unilateral hyperresonance
- Localized dullness in certain regions occurs in different pathologies like consolidation , fibrosis & collapse
  While effusion: Stony dullness mostly over the basal regions

III. AUSCULTATION



A) Auscultation of the Breath sounds

☞ Put you stethoscope over the same abovementioned regions of PERCUSSION and ask the patient to take a deep breath in and out ,

Listening for the following ☜☜

1. Inspiration & expiration

- Normally the inspiratory phase is 2 - 3 times of expiratory phase
- If expiratory phase is **prolonged**, it is suggestive of **Obstructive Lung Disease**
- Then listen carefully to hear the breath sounds and you have to determine if you hear normal vesicular breathing or bronchial breathing (you can recognize the normal vesicular breathing by Auscultation of your chest!! And compare it
- **Normally,** you hear only vesicular breathing
- Bronchial breathing is the sound that hear if you put your stethoscope on your trachea (like blowing in a hollow tube) and normally it is NOT HEARD over normal lung regions
- If you hear bronchial breathing on any region of the chest, if might indicate one of such possibilities ☜☜☜
  Consolidation or Collapse!!
- Then you should auscultate each region carefully and you have to note that if it is normal AIR ENTRY or Decreased air entry at any regions that have auscultated!!
- any lung pathologies will lead to decreased air entry on the affected lung (lungs)

2. Added Sounds

Auscultate carefully for the following added sounds

- **Rhonchi (Wheezes)**

Musical expiratory sounds that are heard all over the lung regions or locally due to **bronchial obstruction**

So, it is pathognomonic sign in obstructive lung diseases like COPD, Bronchial asthma

In asthma, it is expiratory, if it is both inspiratory and expiratory, it indicates severe asthma !!

- **Crepitations (Rales or Crackles)**

Inspiratory crunching or rattling sounds that result from moving of air through fluid filled alveoli or inflamed alveoli

- If fine ➔ صوت طرقعة
- If medium or coarse➔ صوت كركره أو بقلله
  - Causes of Crackles
- Infection (consolidation of Pneumonia)
- Inflammation (chronic inflammation = interstitial lung fibrosis)
- Fluid (pulmonary edema & fluid overload)

Fine Crackles

- At the base of lungs in hear failure + other features of CHF
- Velcro type in pulmonary fibrosis: sounds like rubbing of hair between fingers (CHRONIC)
- Localized in certain lung region(s) in consolidation or pneumonia

± Bronchial breathing (ACUTE)

Coarse crepitations in Pulmonary Edema & Secretions

- Course crackles: sounds like squeezing a paper bag!!
- Ask the patients to cough, if Coarse crepitations clear, it indicates secretions!!
- If crepitations are altered with cough (partially clear or change with cough) --> it might indicate Bronchiectasis!!

  If crackles clear completely --> they indicate Secretions

B) Vocal resonance

- Ask the patient to say 4 4

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- And auscultate the same areas

  Normally: vocal resonance is equal on both sides & all regions

- All lung pathologies lead to decreased vocal resonance according to affection of the lungs (part or whole lung /lungs) EXCEPT
  - Consolidation (like Pneumonia)
  - Collapse (atelectasis)
  - Sometimes (cavity)
- If you suspect consolidation of Pneumonia --> if you hear the increased TVF in affected region , ask the patient to Whisper

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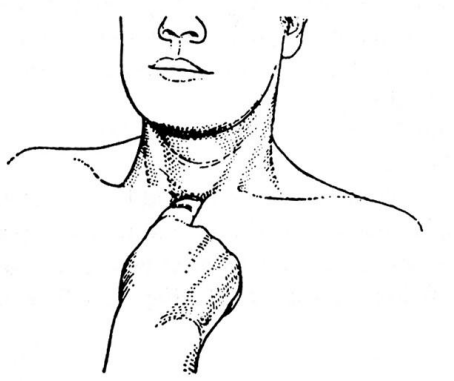
- if the sound is augmented

  --> It indicates Whispering pectoriloquy (pathognomonic for pneumonia)

IV- EXAMINATION OF THE TRACHEA

You have to examine the **trachea** for the following items



- **Central Or Shifted** (deviated)

Normally: central

Deviation:

It occurs only in unilateral lung lesions (pathology affecting one lung only)

- **To the opposite side** of the lesion = pushed
- **To the same side** of the lesion = pulled

As In Lobar Collapse, Pneumonectomy & Lobectomy

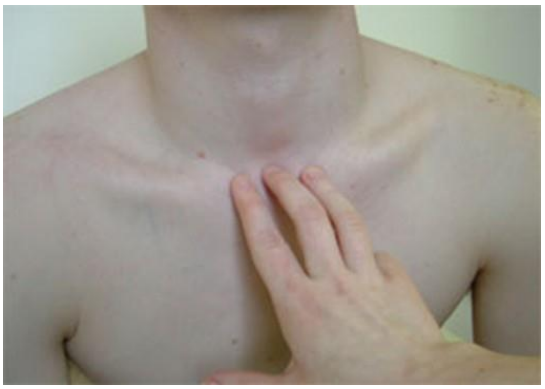
- **Crico-sternal distance** (normally 3 - 4 finger breadth (تقيسها بصوابع العيان)

If < 3 --> airway obstruction (a sign of COPD)

Tracheal Tug : ask the patient to take a breath while you are putting your pads of fingers on the trachea ,

- Normally, the trachea will not hit your pads of fingers
- While, if the trachea hits your fingers with inspiration

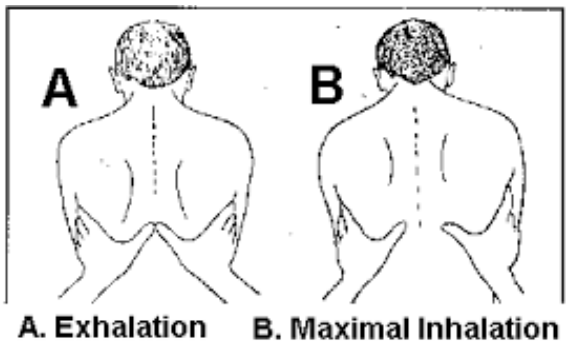
--> Positive tracheal tug (indicates airway obstruction)



V- EXAMINATION OF THE BACK

Inspection

Examine for deformities and scars as mentioned before



Chest expansion:

Do test for chest expansion in 3 regions

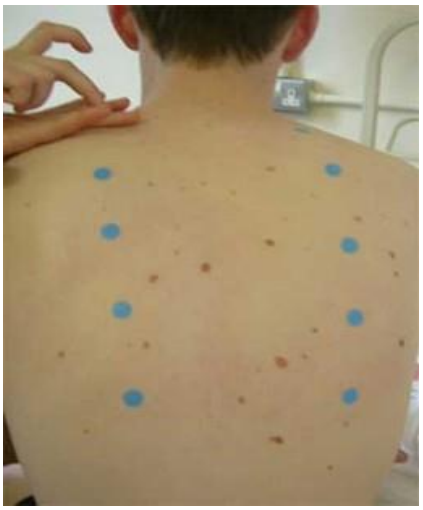
- Supra-scapular, Scapular and Infra-scapular

Percussion

☞ Percuss both lungs bilaterally in such manner

لازم يكون صباعك محطوط فى الintercostal space

بين ال ribs وموازى ليهم وتخبط عليه بالصباع التانى



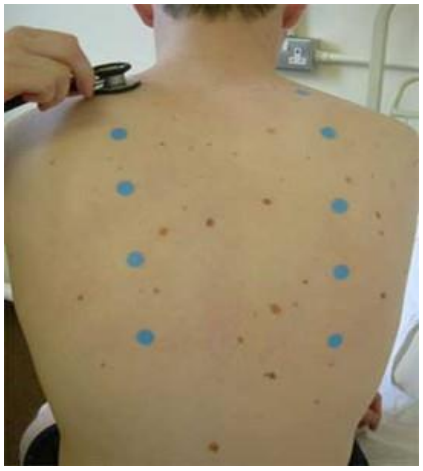
1: Apex

2: inter-scapular

3: infra-scapular

☞ Interpretation of percussion: as mentioned before

Auscultation



A) Auscultate for breath sounds, air entry & added sounds in the same abovementioned areas

B) Auscultate for Vocal resonance (TVF) in the same above mentioned areas

Finally: palpate for sacral edema after asking of the patient about pain while you are looking at his face