Physical Examination of the Chest

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20 Gennaio 2017
Chest Topography: Anterior Chest

- Right midclavicular line
- Left midclavicular line
- Midsternal line
Chest Topography: Lateral Chest

Anterior axillary line
Midaxillary line
Posterior axillary line
Chest Topography: Posterior Chest

Left scapular line

Right scapular line

Midspinal line

NL
Fissures:

**FIG. 2-8** Topographic position of lung fissures on anterior chest.

**FIG. 2-9** Topographic position of lung fissures on posterior chest.
Location of Lobes
Physical Exam Techniques

- Observation
- Palpation
- Percussion
- Auscultation
• Patient’s surroundings, ie: the view from the door
  – Equipment present
  – Posted signs
  – SPUTUM!

Table 13-2. Disease States Associated with Abnormal Gross Appearance of the Sputum

<table>
<thead>
<tr>
<th>TYPE OF SPUTUM</th>
<th>LUNG ABDOMS</th>
<th>ACUTE BRONCHITIS</th>
<th>CHRONIC BRONCHITIS</th>
<th>PNEUMONIA</th>
<th>PULMONARY EDEMA</th>
<th>PNEUMONIC HEMORRHAGE</th>
<th>TUBERCULOSIS</th>
<th>LUNG CANCER</th>
<th>PULMONARY INFARCTION</th>
<th>BRONCHIAL ASTHMA</th>
<th>CYSTIC FIBROSIS</th>
<th>ASPIRATION PNEUMONIA</th>
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<tbody>
<tr>
<td>Mucoid (white or clear)</td>
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<td>Mucopurulent</td>
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<td>Purulent (yellow or green)</td>
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<td>Fetid</td>
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<td>Bloody</td>
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<td>Frothy, sometimes pink</td>
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</table>
Observation: Breathing Patterns

- Eupnea
- Tachypnea/Bradypnea
- Biot’s
- Cheyneyes-Stokes
- Kussmaul
Observation: Thoracic Contour

FIG. 2-11  A. Patient with normal thoracic configuration. B, Patient with increased anteroposterior diameter. Note contrasts in angle of slope of ribs and development of accessory muscles. (From Malanos L and others: Health assessment, ed 2, St Louis, 1981, The CV Mosby Co.)
Observation: Thoracic Contour (cont.)

- Pectus Excavatum
- Pectus Carinatum
- Kyphosis
- Scoliosis
- Kyphoscoliosis
- Symmetry of chest movement
**Observation: Clubbing**

**FIG. 2-23**  
A, Normal digit configuration. B, Mild digital clubbing with increased hyponychial angle. C, Severe digital clubbing; depth of finger at base of nail (DPD) is greater than depth of interpharyngeal joint (IPD) with clubbing.
Palpation: Tracheal Alignment
Tracheal Alignment Abnormalities

- Pneumothorax – shifts to unaffected side
- Pleural Effusion – shifts to unaffected side
- Fibrosis or Atelectasis – shifts towards affected side
- Pulmonary consolidation – no shift
Palpation: Chest Excursion

Palpation: Vocal Fremitus

- BILATERAL comparison of vocal vibrations
- Increased with alveolar consolidation
- Decreased with increased distance between lung and chest wall
  - Pneumothorax, Pleural effusion
Percussion

- Assess density of underlying tissue
Percussion Notes

- Resonance – normal
- Dullness – increased density
  - Atelectasis, alveolar filling/consolidation, pleural effusion, fibrosis
- Hyperresonance – decreased density
  - Hyperinflation (COPD), Pneumothorax
A patient is recently diagnosed with RLL bronchogenic CA. As you enter the room, you see that the patient is on 4 LPM nasal cannula. He appears short of breath with tachypnea and shallow respirations. Chest excursion appears normal except in the RLL. Vocal fremitus is also absent in the RLL. Percussion reveals dullness in the RLL.
Auscultation

Examination of the Lungs: Auscultation

- Auscultate the lungs on both sides at the same intercostal level
- Vesicular breathing is heard over the normal lung parenchyma
- Bronchial breath sounds are heard over diseased parenchyma
- Consolidation of the lung causes Bronchial breath sounds

(c) 2006, Kanchan Ganda, M.D.
- **Auscultation.** Listen to air movement in lungs to detect normal or adventitious breath sounds.

- (1) **Vesicular sounds** are low-pitched, rustling sounds heard over most of lung field, most prominently on inspiration. They indicate normal, clear lungs.

- (2) **Bronchial sounds** are high-pitched tubular sounds with a slight pause between inspiration and expiration. They are normal over large airways.

- (3) **Bronchovesicular sounds** are combination of vesicular and bronchial sounds, normally heard anterior to the right or left of the sternum and posterior between the scapulae; inspiration and expiration are equal.

- (4) **Adventitious breath sounds** are crackles (i.e. fine to coarse), wheezes and pleural friction rub.