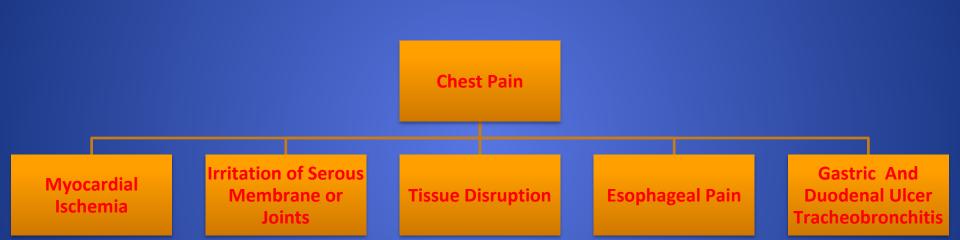
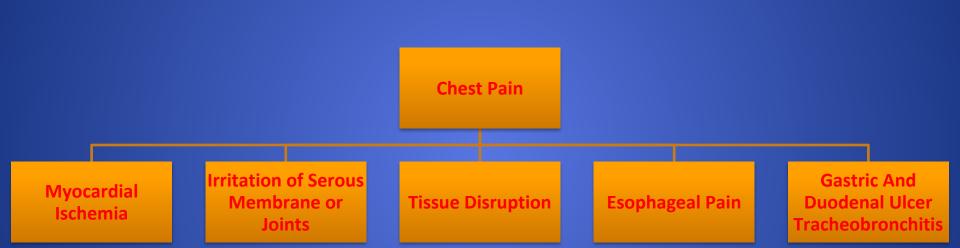
CHEST PAIN lec 2

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3- Pain due to tissue disruption

- Abrupt and sever pain.
- Aortic dissection, pneumothorax, mediastinal emphysema, and esophageal rupture.



4- Esophageal Pain

Deep thoracic burning pain results from chemical irritation of the esophageal mucosa secondary to acid reflux or from spasm of the esophageal muscles and characteristically follows swallowing.

- Associated with dysphagia, regurgitation of food and weight loss.
- Confirmed by Bernstien,s acid perfusion test (acid reflux) and esophageal manometry with measurement of lower esophageal sphincter pressure (esophageal spasm).

5- Gastric, duodenal ulcer and Tracheobronchitis

Gastric and duodenal ulcers can cause referred chest pain. Tracheobronchitis Causes Burning pain increased by coughing. Others include breast diseases, herpes zoster, malignancy of ribs and emotional.

Approach to patient with Chest Pain

1. Detailed history

 Most important: Location, radiation, quality, intensity, duration and precipitating and relieving factors.

2. Clinical Examinations

At the time of the chest pain.

3. Attempt to produce and alleviate the pain

Exercise, and response to Nitroglycerine.

4. Investigation

ECG, radiology and cardiac enzymes.

Dyspnea

Important cardinal symptom of diseases affecting the cardiorespiratory system, defined as:

An abnormal, uncomfortable awareness of breathing.

- The breathing pattern is normally controlled by a series of high central and peripheral mechanisms that can increase ventilation in excess of metabolic demands in conditions such as anxiety, fever and physical activity.
- A normal resting person is unaware of the act of breathing.

Dyspnea can be described in various ways

- 1. Can't get enough air.
- 2. Air does not go all the way down.
- 3. Tightness in the chest.
- 4. Fatigue in the chest.
- 5. Choking sensation.

 There are situations in which there is tachypnea but person does not feel dyspnea,
e.g., hyperventilation of acidosis.

Quantitation of dyspnea

This is related to degree of exertion (New York Heart Association Classification) (NYHA)

- $-G_1$ dyspnea on heavy exertion
- G, dyspnea on mild exertion
- $-G_3$ dyspnea at usual daily activity
- $-G_{\Delta}$ dyspnea at rest

- Sudden and unexplained dyspnea at rest → Pulmonary embolism, spontaneous pneumothorax and anxiety.
- PND (Paroxysmal Nocturnal Dyspnea) → LVF (Left ventricular Failure).
- 3) Orthopnea: Dyspnea on lying flat, relieved by sitting → LVF
- 4) Trepopnea: Dyspnea on left or right lateral decubitus position → Heart diseases.
- 5) Platypnea: Dyspnea in the upright position.

Differential Diagnosis: Causes of dyspnea

Causes

- Obstructive Diseases
- Diffuse Parenchymal I
- Pulmonary Vascular D
- Diseases of Chest Wa
- Heart Diseases
- Anxiety Neurosis

Obstructive diseases of airways: dyspnea and stridor

- A. Large airway obstruction (extra-thoracic):
 - Acute: Inhalation of foreign bodies and angioneurotic edema.
 - Chronic: Tumors and stenosis following tracheostomy.

B. Small airway obstruction (intra-thoracic):

- Acute and intermittent → asthma
- Chronic → Chronic bronchitis and bronchiectasis

Prolonged expiratory phase, Rhonchi and crepitation

2) Diffuse parenchymal lung diseases:

Pneumonia, pulmonary fibrosis, fibrosing
alveolitis, sarcoidosis → exertional dyspnea,
tachypnea, ↓ CO₂ pressure, ↓ O₂ pressure and
↓ lung volume.

3) Pulmonary vascular disease:

- Recurrent pulmonary emboli.
- Source of emboli → such as DVT (Deep venous thrombosis) is helpful. Arterial blood gases abnormal, normal lung volume.

4) Deseases of chest wall and respiratory muscles:

- Sever kyphoscoliosis (Lateral Curvature of Spine in relation to anteroposterior curve), pectus excavation.
 This will be evident on examination.
- Weakness or paralysis of respiratory muscles: Dyspnea and respiratory failure → other signs and symptoms of neurologic or muscular disorders (Guillain barre syndrome and myasthenia gravis).

5) <u>Heart diseases:</u>

Left ventricle dysfunction & \downarrow left ventricle compliance and mitral stenosis \Rightarrow Left Atrial hypertension \Rightarrow \uparrow pulmonary capillary pressure \Rightarrow exertional dyspnea \Rightarrow \uparrow hydrostatic pressure in pulmonary vascular bed \Rightarrow transudation of fluid into interstitial space \Rightarrow pulmonary edema.

- The first symptom may be a non-productive cough, occurs in the recumbent position particularly at night.
- Orthopnea and PND (attacks of dyspnea occur at night and awaken the patient from sleep). These are characteristics of advanced heart disease.

Diagnosis of Cardiac Dyspnea

- 1. History: Previous heart disease, e.g., M.I
- 2. Physical exam: 3rd, 4th heart sound, LVE (Left Ventricular Enlargement), ↑ JVP, peripheral edema, ascites.
- 3. Radiology: interstitial edema, pulmonary vascular redistribution Kerley B-Lines, cardiomegaly and pleural effusion.
- 4. Differentiation from pulmonary dyspnea can be difficult, respiratory dyspnea is usually more gradual unless there is pneumonia, pnumothrax or exacerbation of asthma.
- 5. Investigations: PFT (Pulmonary Function Test), ECG, chest x-ray (CXR) and echocardiography.

6) Anxiety neurosis:

- Dyspnea here is difficult to evaluate, some clues are useful
 - 1. Frequent sighing respiration and a bizarre irregular breathing pattern which returns to normal during sleep.
 - 2. Normal pulmonary and cardiac examination and investigation.