Organized by:
Reham Al-Henaki - Sarah Bin-Hussain ~

❖ What is the definition of chronic bronchitis?

- Chronic bronchitis is a clinical definition: a persistent cough with sputum production for at least three months in two consecutive years.

❖ What is the definition of asthmatic bronchitis?

- Some patients with a clinical definition of chronic bronchitis have hyperresponsive airways with intermittent bronchospasm. This condition is called asthmatic bronchitis.

❖ How do asthmatic bronchitis differ from those seen in a typical case of allergic asthma?

- Patients with asthmatic bronchitis has mucous gland hyperplasia

In typical allergic asthma, which also has mucous gland hyperplasia, the bronchial wall has an inflammatory infiltrate in which eosinophils are prominent. There is also hypertrophy and hyperplasia of smooth muscle cells in asthma.

❖ How do they differ from those seen in bronchiectasis?

- Infection-related destruction of the bronchial wall is the characteristic appearance of bronchiectasis.

❖ What x-ray features may be present in cor pulmonale?

- In chronic cor pulmonale, right ventricular dilation and hypertrophy, as well as increased vascular markings at the hilum, are seen in a chest x-ray

❖ What is the definition of emphysema?

- Emphysema is a lung condition characterized by abnormal permanent enlargement of the airspaces distal to the terminal bronchiole, accompanied by destruction of their walls without obvious fibrosis.

❖ Is this a clinical or an anatomic term?

- Anatomic.

❖ What are the major forms of emphysema? Can they always be distinguished from each other? What are the usual distribution and histopathologic features of centrilobular emphysema?

- The forms of emphysema are defined by their anatomic nature. In centriacinar (centrilobular) emphysema, the central or proximal parts of the acini, formed by respiratory bronchioles, are affected, whereas the distal alveoli are spared. This is the usual form associated with COPD, and it usually is more severe in the upper lobes. Panacinar (panlobular) emphysema is characterized by uniform enlargement of the acini from the level of the respiratory bronchioles to the terminal blind alveoli. It affects the lower lobes more severely, and it is associated with alpha1-antitrypsin deficiency. In advanced cases, the distinction may be impossible to make.

❖ What lung function tests are useful in distinguishing obstructive vs restrictive lung diseases?

- Obstructive lung diseases have increased resistance to airflow, usually measured by the forced expiratory volume at one second (FEV1). Restrictive lung diseases have reduced total lung capacity, usually measured by the forced vital capacity (FVC) test. Many conditions have both obstructive and restrictive features.

❖ What is the most likely cause of septal wall destruction in emphysema?

- The most plausible explanation is protease-antiprotease imbalance. The proteases (eg, elastase) are derived from neutrophils and macrophages that accumulate in the lungs of smokers. The principal antiprotease is alpha1-antitrypsin. The activity of this antiprotease is reduced by the effects of smoking.

❖ What does the term "pan" refer to in panacinar emphysema?

- The emphysematous changes involve the entire acinus (and not the entire lung).

❖ With what inherited disease is this condition frequently associated?

- Alpha1-antitrypsin deficiency.

❖ How does cor pulmonale develop?

- Cor pulmonale--right ventricular dilation and hypertrophy--develops following pulmonary hypertension caused by diseases of the lung or pulmonary vasculature. Changes in the pulmonary arteries and arterioles are usually present.

❖ How is cor pulmonale manifested?

- right heart failure is manifested by distended neck veins and enlarged tender liver.
- Manifestation of typical features of severe chronic bronchitis : (so-called blue bloater). Increased sleepiness reflects CO2 narcosis; cyanosis reflects very poor oxygenation; and elevated red cell counts (secondary polycythemia) result from chronic hypoxemia.

Summary

Chronic Bronchitis: Persistent productive cough for at least 3 consecutive months in at least 2 consecutive years, smoking related

forms:	• 1. Simple chronic bronchitis. • 2. Chronic mucopurulent bronchitis. • 3. Chronic asthmatic bronchitis. • 4. Chronic obstructive bronchitis.
Morphology	• Enlargement of the mucus glands, increased number of goblet cells, loss of ciliated epithelial cells, squamous metaplasia, dysplastic changes and bronchogenic carcinoma. • Inflammation, fibrosis and resultant narrowing of bronchioles. • Coexistent emphysema
Clinical features	• Prominent cough and the production of sputum. • COPD with hypercapnia, hypoxemia and cyanosis. • Cardiac failure

Emphysema: Dilated air spaces beyond respiratory arteriols

Types	• Centriacinar: Smoking • Panacinar: deficiency of α1 AT • Paraseptal • Irregular: scar
Clinical features	• Cough and wheezing. Respiratory acidosis • Weight loss. • Pulmonary function tests reveal reduced FEV1.

Complications	• Pneumothorax
	• Death from emphysema is related to:
	  • Pulmonary failure with respiratory acidosis, hypoxia and coma.
	  • Right-sided heart failure (Cor pulmnale)