Chronic Bronchitis

Chronic bronchitis is a type of obstructive lung disease that is caused by chronic inflammation of the airway, which causes recurrent damage to the respiratory epithelium in the bronchi, resulting in hypertrophy of the mucus-secreting glands. This can be measured with Reid index greater than 50%. Reid index measures the thickness of gland divided by the total thickness of the bronchial wall. The clinical diagnostic criteria for chronic bronchitis is productive cough for greater than 3 months per year, for 2 or more years. There are two main forms of COPD: chronic bronchitis and emphysema, although some patients with severe asthma can also be included. Traditionally, patients with chronic bronchitis are referred to as “blue bloaters”, and patients with emphysema are referred to as “pink puffers”. This is because chronic bronchitis patients have early onset hypoxemia and cyanosis (blue), but they have late-onset dyspnea. Common signs and symptoms of chronic bronchitis include wheezing, crackles, and sputum production.

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Pathophysiology

Chronic Inflammation of Bronchi
Crone with Flaming Broccoli
Chronic inflammation of the airways is the underlying cause of this disease and can come from smoking, pneumoconiosis, or infections.

Signs and Symptoms

Early-Onset Cyanosis
Cyan-crayon by Early-sun
Chronic bronchitis patients suffer from early-onset hypoxemia and can appear cyanotic due to a lack of oxygen saturation.

Blue Bloaters
Blue and Bloated
There are traditionally two forms of COPD: chronic bronchitis and emphysema. Patients with chronic bronchitis are referred to as "blue bloaters," whereas patients with emphysema are given the nickname "pink puffers."

Productive Cough
Coughing Up Mucus
The diagnostic criteria for chronic bronchitis is a productive cough, or cough with sputum, for greater than 3 months per year for 2 or more years. This state is due to an increased number (hyperplasia) of goblet cells and increased size (hypertrophy) of mucus glands.

Wheezing
Weasel
Airway narrowing can lead to wheezing, often heard in patients with chronic bronchitis.

Chronic Obstructive Pulmonary Disease (COPD)
C.O.P.D Cop
Chronic bronchitis is a form of COPD (chronic obstructive pulmonary disease). Emphysema and Asthma are the other forms of COPD.

Late-Onset Dyspnea
Late-moon with Disc-P-lungs
Chronic bronchitis patients have late-onset dyspnea, or shortness of breath. It is commonly noticed first during exercise or high lung demand and tends to worsen over time.

Crackles
Crackers
Crackles, or rales, are popping sounds made by air being forced through respiratory passages restricted by mucus, fluid, or pus. They are associated with atelectasis and inflammation of the airways.

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Diagnosis

Reid Index > 50%

Red Index Card saying 50

The Reid index measures the thickness of the gland divided by the total thickness of the bronchial wall. Hypertrophy and hyperplasia of the glands in chronic bronchitis result in a Reid index of greater than 50%.

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