





PATHOLOGY OF COPD


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- COPD is a group of pathological conditions in which there is chronic complete obstruction to the air flow at any level from trachea to the smallest airways resulting in functional disability of the lungs.

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- Morphological Features – In chronic Bronchitis- grossly the bronchial wall is thickened, hyperaemic and edematous. Lumina of the bronchi and bronchioles may contain mucus plugs and purulent exudates.

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- Microscopic Features – Hypertrophy and hyperplasia in the cartilage containing large airways .The bronchial epithelium may show squamous metplasic and dysplasia.

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- EMPHYSEMA – The WHO has defined pulmonary emphysema as a combination of permanent dilation of air spaces distal to the terminal bronchioles and destruction of the walls of dilated air-spaces.

- Grossly – the lungs are voluminous, pale with little blood. The edges of the lungs are round. Mild cases show dilation of air spaces visible with hand lens.
- Advanced cases show subpleural bullae and blebs bulging outwards from the surface of the lungs with rib marking between them.

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- Bullae are air filled cyst like or bubble like structures, larger than 1 cm in diameter. They are formed by the rupture of adjacent air spaces while blebs are the result of rupture of adjacent air spaces.
 - Blebs are the result of rupture of alveoli directly in the sub pleural interstitial tissue and the common cause of spontaneous pneumothorax.


BRONCHIECTASIS

- Bronchiectasis is an abnormal and irreversible dilatation of the bronchi and bronchioles (greater than 2 mm in diameter), developing secondary to inflammatory weakening of the bronchial walls.

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- Morphologic features – The disease characteristically affects distal bronchi and bronchioles beyond the segmental bronchi.

- Grossly – the lung may be involved diffusely or segmentally. Bilateral involvement on lower lobe occurs most frequently. More vertical air passages of left lower lobe are more often involved than the right. Pleura is thick and fibrotic with adhesions to the chest wall. (Types)

- Microscopically –
- 1. Bronchial epithelium may be normal, ulcerated or may show squamous metaplasia.
- 2. Bronchial wall shows infiltration by acute and chronic inflammatory cell and destruction of normal muscle and elastic tissue with replacement by fibrosis.

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- 3. the intervening lung parenchyma shows fibrosis, while the surrounding lung tissue shows changes of interstitial pneumonia.
 - Pleura in the affected area is adherent and shows bands of fibrous tissue between the bronchus and the pleura.