

pathology

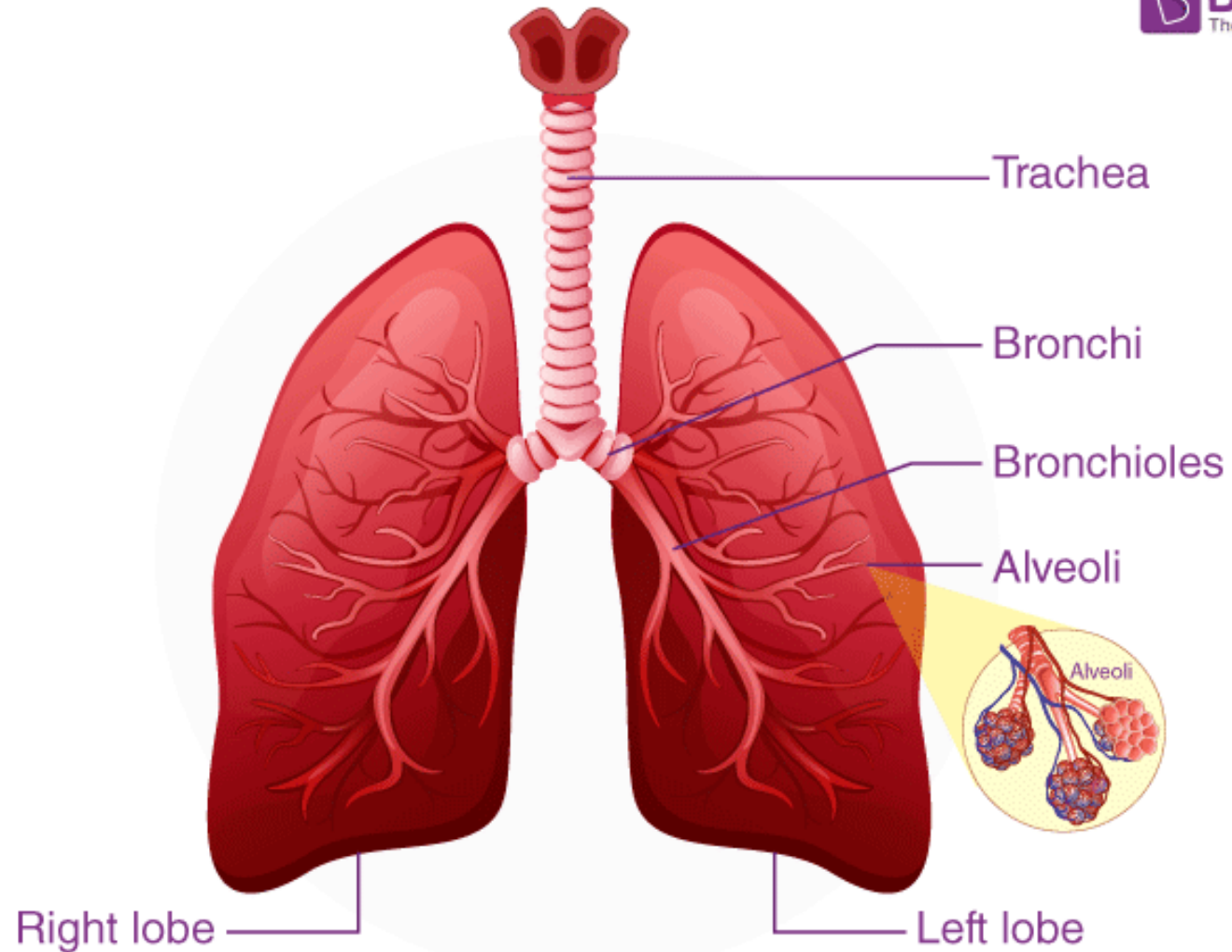
Fourth stage

By

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Anatomy of lungs



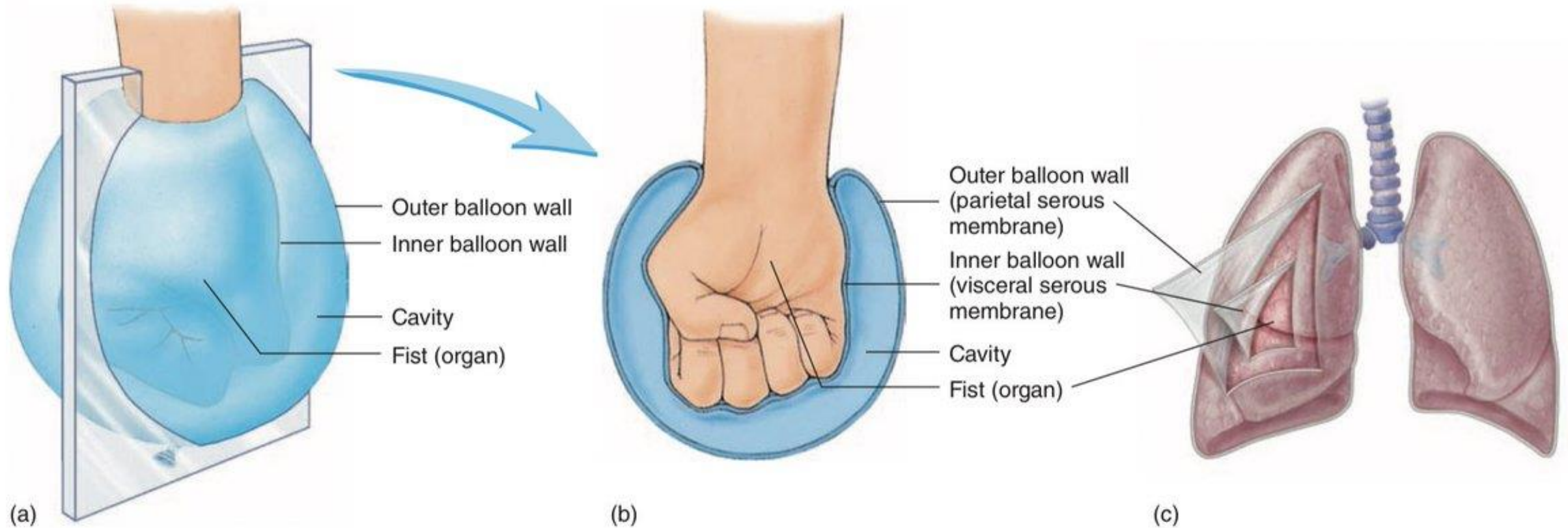
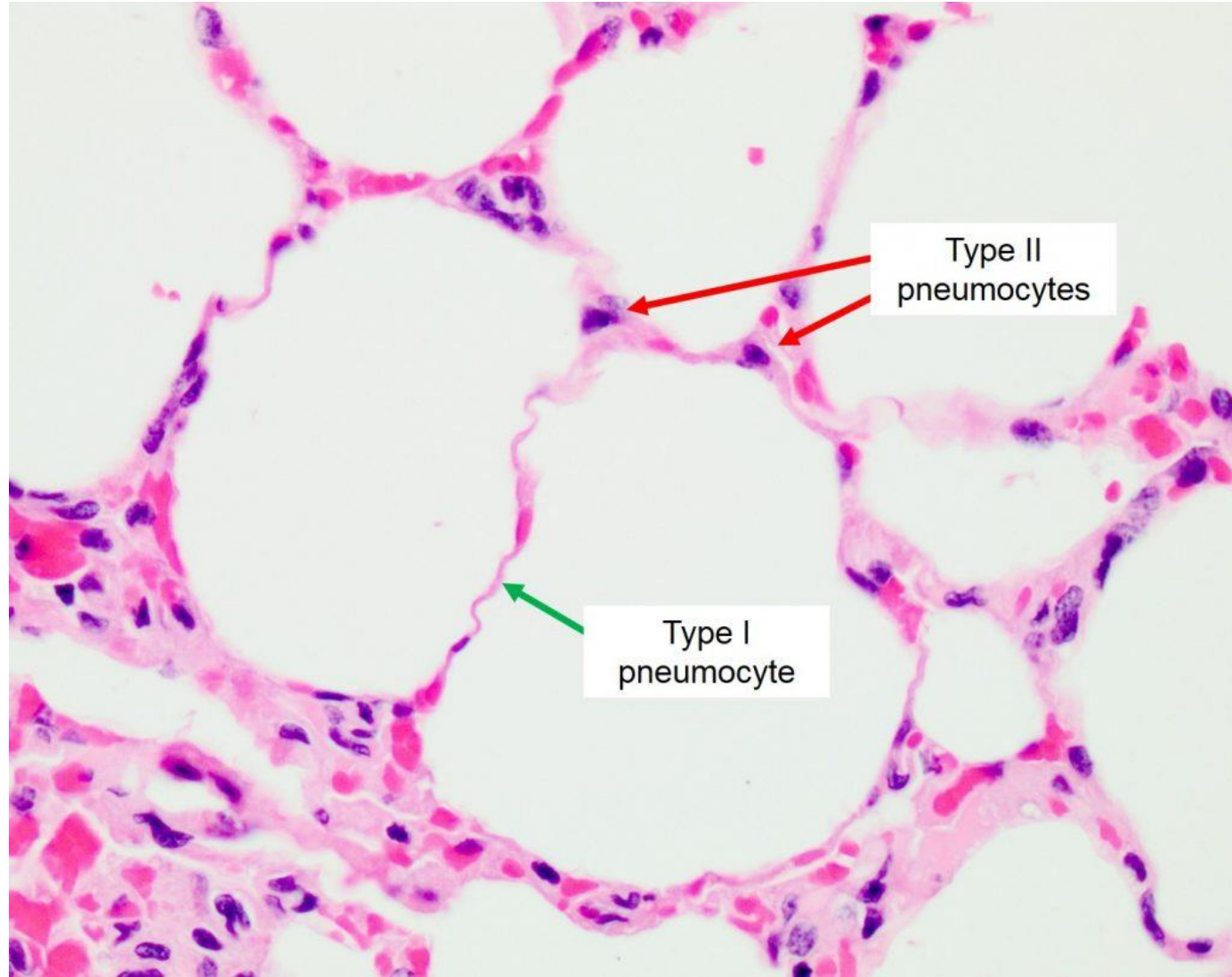


FIGURE 1.15 Serous Membranes

(a) A fist pushing into a balloon. A “glass” sheet indicates the location of a section through the balloon. (b) Interior view produced by the section in (a). The fist represents an organ, and the walls of the balloon represent the serous membranes. The inner wall of the balloon represents a visceral serous membrane in contact with the fist (organ). The outer wall of the balloon represents a parietal serous membrane. (c) The relationship of the parietal and serous membranes to the lungs. Figure 1.16 shows the relationship of the parietal and visceral membranes to the heart.

Histology of lung



Atelectasis

Atelectasis: also known as collapse, is loss of lung volume caused by inadequate expansion of air spaces. It results in shunting of inadequately oxygenated blood from pulmonary arteries into veins, thus giving rise to a ventilation-perfusion imbalance and hypoxia.

atelectasis is classified into three forms:-

- 1. Resorption atelectasis*
- 2. Compression atelectasis*
- 3. Contraction atelectasis*

1. Resorption atelectasis. Resorption atelectasis occurs • when an obstruction prevents air from reaching distal airways. The air already present gradually becomes absorbed, and alveolar collapse follows. Depending on the level of airway obstruction, an entire lung, a complete lobe, or one or more segments may be involved. The most common cause of resorption collapse is obstruction of a bronchus by a mucous or mucopurulent plug. This frequently occurs postoperatively but also may complicate bronchial asthma, chronic bronchitis, tumor, or foreign body aspiration, particularly in children.

2. Compression atelectasis. Compression atelectasis (sometimes called *passive* or *relaxation atelectasis*) is usually associated with accumulation of fluid (hydrothorax), blood (hemothorax), or air (pneumothorax) within the pleural cavity, which mechanically collapses the adjacent lung. This is a frequent occurrence with pleural effusion. Basal atelectasis resulting from the elevated position of the diaphragm commonly occurs in bedridden patients, in patients with ascites, and during and after surgery.

3. Contraction atelectasis. Contraction occurs when either local or generalized fibrotic changes in the lung. Atelectasis (except when caused by contraction) is potentially reversible and should be treated promptly to prevent hypoxemia and superimposed infection of the collapsed lung.

Acute Lung Injury

Acute Lung Injury :The term *acute lung injury* encompasses a spectrum of bilateral pulmonary damage (endothelial and epithelial), which can be initiated by numerous conditions. Clinically, acute lung injury manifests as (1) acute onset of dyspnea, (2) decreased arterial oxygen pressure (hypoxemia), and (3) development of bilateral pulmonary infiltrates on the chest radiograph, all in the absence of clinical evidence of primary left-sided heart failure. Acute lung injury can progress to the more severe *acute respiratory distress syndrome*.