

occurs to the erectile tissue in the other cavity. The resistance then governs the airflow through the each nasal cavity.

The Pharynx

The pharynx is a funnel shaped passageway that is about 12.cm long. It connects the posterior nasal and oral cavities to the oesophagus and larynx. It extends from the skull base to the sixth cervical vertebrae. It has three parts: the nasopharynx which is where the nasal cavity opens above the soft palate, the laryngopharynx and the oropharynx.

In the pharynx, the food passage and the air passage cross, as the larynx, which receives air, is ventral to the oesophagus, which receives food. The larynx lies at the top of the trachea. The larynx and trachea are normally open, allowing air to pass, but the oesophagus is normally closed and opens only when a person swallows.

The food or air is directed down correct passageway, either the trachea or the oesophagus by being controlled by the epiglottis. The epiglottis is a flap of elastic cartilage tissue that covers the trachea when food is swallowed to prevent objects entering the larynx.

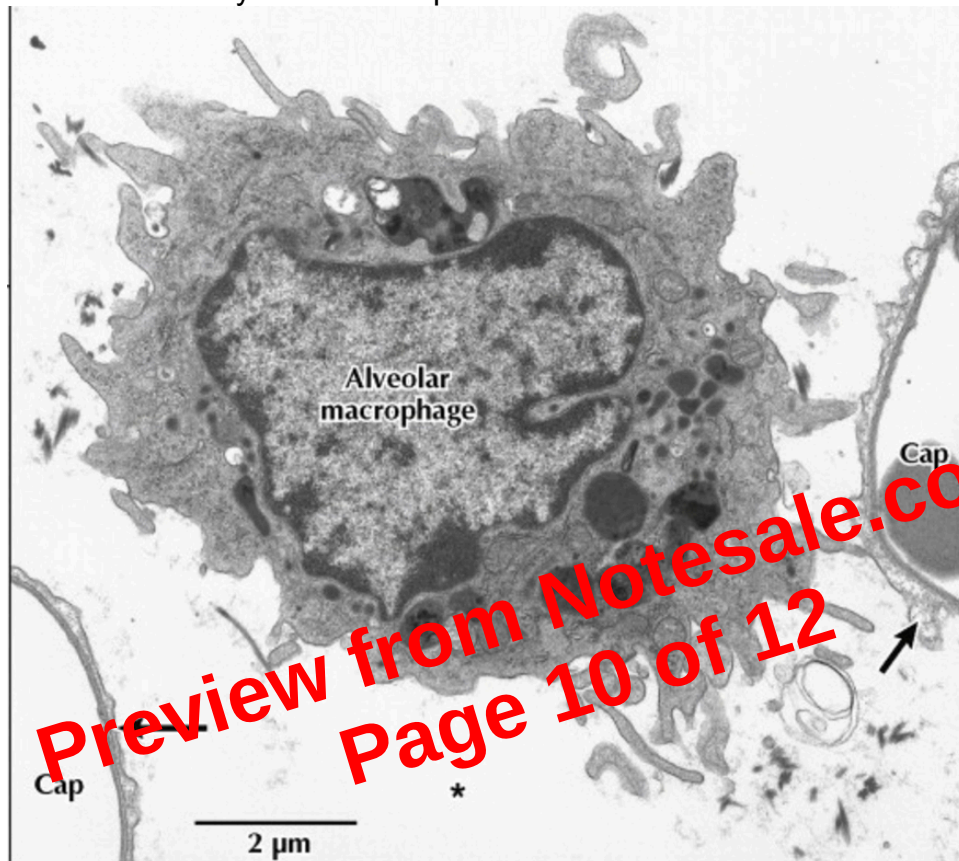
During swallowing, the soft palate and its uvula point upwards closing the nasopharynx so that neither air nor food can pass through it. Therefore breathing is momentarily stopped. The connection opens and closes to equalise the air pressure in the middle ear to that of the atmosphere for the conduction of sound. The surface of the nasopharynx is covered by pseudo-stratified columnar epithelium. This is the same epithelium found in the nasal cavity and similarly the same mechanism of mucous secretion from goblet cells in the epithelium to filter, warm and humidify the inhaled air occurs here. In the oropharynx and laryngopharynx, the surface is lined with non-keratinizing stratified squamous epithelium.

The Larynx

The larynx is a cartilaginous organ that acts as a passageway for air between the pharynx and the trachea. The larynx can be described as a triangular box whose apex, the Adam's apple, is located at the front of the neck. The airway cavity of the Larynx extends at the epiglottis to the cricoid cartilage where it can be found to be a continuous lumen of the trachea. There are two pairs of mucous membrane folding's that extend inward and horizontally across the larynx. The vestibular folds are the upper folders and the true folds are vocal folds.

The vestibular and vocal folds split the larynx into the vestibule which is just above the vestibular folds; the ventricle, the small middle chamber is located between the vestibular and vocal folds; and the infraglottic cavity, which extends from the vocal folds to the lower border of the cricoid cartilage. The

from blood monocytes whose precursors arise in bone marrow. They migrate across the walls of pulmonary capillaries to the interalveolar septa. They undergo maturational division in the interstitium of the lung and then enter alveolar spaces to lie free in the lumina. After they remove debris from alveoli, they move up the bronchial tree, where they are carried by cilia and are eventually swallowed or expectorated with mucus. In certain types of heart disease, such as congestive heart failure, erythrocytes from the bloodstream may escape into pulmonary alveolar spaces, where alveolar macrophages may phagocytose them. These swollen macrophages with ingested hemosiderin may be seen in sputum and are known as heart failure cells.



Clinical Aspects

There are several well-known examples of failure of normal physical development of the lung. Tracheoesophageal fistula results from the failure of the normal formation of tracheoesophageal septum. The syndrome has an incidence of approximately 1:3000 births. There are five different types of tracheoesophageal fistula. Ninety percent have blind upper esophageal pouch and connection of distal esophagus to lower trachea. Diaphragmatic hernia results from failure of one of the pleuroperitoneal membranes to close. This occurs predominantly on the left side. This defect has an incidence of 1:2000 births. Finally, we cannot ignore the supremacy of the lung compared with other organs.

Another lung disorder is cystic fibrosis, which is an autosomal recessive disorder. It is caused by defective transport of chloride ions in mucous cells of seromucous glands in the respiratory tract as well as in cells producing sweat.