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Assignment Title Systemic Histology, Anatomy and Physiology Students

Course title: Histology of special senses and Neurohistology

Course code: ANAT 204

Question: Explain the histological base of upper respiratory system (Conducting portion of the respiratory system) situated by Coronal plane.

The upper respiratory system (conducting portion of the respiratory system) are

1. Nasal cavity
2. Pharynx
3. Larynx
4. Trachea
5. Bronchi
6. Bronchioles
7. Alveoli
8. Epiglottis

Nasal cavity: Nose: the primary mode of entry of air into airway

1. Nasal Vestibule is lined by keratinized stratified squamous epithelium
 2. Vibrissae (modified hairs) that filter out larger particles from inspired air
 3. The epithelium undergo transition to pseudostratified columnar ciliated epithelium with goblet cell which produces mucus.
- The respiratory epithelium covers the floor, medial and lateral wall. It is lined with mucosa which has same epithelium like the transitional epithelium.
- The mucus layer covers the surface of nasal cavity which have 5 cells
1. Ciliated Columnar cell
 2. Goblet cell
 3. Brush cell
 4. Basal cell - this cell is found at the basement of respiratory

epithelium

produce more cells to replace damaged cells

5. Small granulos cell.

The second part of mucosa is the lamina propria which is richly vascularized and contains large arterial plexus and venous sinus; seromucous gland which are dispersed throughout the mucosa membrane their secretion and is. respiration by moistening the inspired air and trapping unwanted particles

6. Contain lymphoid element.

- Pharynx:

1. Similar lining as Nasal cavity (epithelium)

2. The lamina propria of Naso-pharynx contain pharyngeal tonsil

- epiglottis project posteriorly to separate the pharynx from the larynx

- contain elastic cartilage

- lined by stratified squamous epithelium and pseudostratified ciliated columnar

- lamina propria contain seromucous gland

- to prevent food from entering the lower airway during swallowing.

- Larynx: connects Pharynx to trachea.

- features

- lined by similar respiratory epithelium

- Cartilage are made with hyaline and elastic cartilage and are located in lamina propria

- have two folds consist of superior and inferior vestibular fold
Pseudostratified ciliated columnar epithelium lined the superior vestibular fold and stratified squamous non keratinized epithelium lined inferior vocal folds.

- Trachea -

Covered with respiratory epithelium possess cilia and are made up with ciliated columnar cells and they are goblet cell, brush, basal, granule, mast cell

larynx proper - is pharyngeal tonsil: elastic fiber, lymphocyte, mast cell, blood vessel

submucosa: Blood vessel and duct
Loose connective tissue
Seromucous gland

Cartilage & smooth muscle layer: (1) C-shaped hyaline cartilage have perichondrium and chondrocytes
(2) the end is connected by smooth muscle

ADventitia: fibrous elastic tissue

BRONCHUS:

There are 3 part which are

- 1) The principal bronchi (primary) → similar trachea epithelium
- 2) The Secondary Bronchi: Contain Irregular hyaline cartilage and Pseudo stratified ciliated columnar
- 3) The Tertiary / Segmental Bronchi: Columnar epithelium lines it

Bronchovascular Terminal Bronchioles: (1) No cartilage
(2) Smooth muscle
(3) Clm cell
(4) Columnar epithelium

Respiratory Bronchiole: (1) No mucous gland
(2) Cuboidal epithelium

Alveoli SAC

posses three cell

Alveolar Type I pneumocyte cell: Small alveolar cell
the cell shape is very complex
present look of blood form
Capillaries: tight Junction
Squamous epithelial cell

2 Alveolar Type II Pneumocyte

1. Large alveolar cells
2. Surrounded by cuboidal epithelium lining
3. It has cell that produce pulmonary surfactant and these surfactant (1) remove from the surface exposed pulmonary surfactant type

(2) decreases the force that is needed to inflate alveolar during inspiration

4. Contain large number of granules called cytosine or multilamella

3 Macrophage / Dust cell

- Lined with cuboidal epithelium
- Inside the lung is where air exchange take place
- The inhaled dust pass through the dust cells