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Oral Cavity & Salivary Glands

Monday, January 07, 2008

1:00 PM

Layers of the GI Tract

1. Mucosa (mucous membrane)
 - epithelium
 - lamina propria
 - muscularis mucosa
 - i. Lining Mucosa: lip, cheek, floor of mouth, soft palate, ventral surface of tongue
 - ii. Masticatory Mucosa: gingiva, hard palate
 - 1) Epithelium - keratinized or parakeratinized
 - 2) Submucosa - absent
 - iii. Specialized Mucosa: dorsal surface of tongue
 - 1) Filiform Papillae – keratinized epithelium
 - 2) Fungiform Papillae - non-keratinized epithelium
 - 3) (Foliate Papillae) - rudimentary in human
 - 4) Circumvallate Papillae – non-keratinized epithelium with associated taste buds and von Ebner's salivary glands
2. Submucosa
3. Muscularis Externa
 - inner-circular
 - outer-longitudinal
 - (3RD layer in stomach)
4. Serosa or adventitia

Glands

- Glands within the GI Tract
- Glands outside - Salivary glands, Liver, Pancreas
- Epithelium - non-keratinized
- Submucosa contains salivary glands

- Oral Mucosa
 - Lip
 - Outer lip: skin, hair follicles, sebaceous glands, sweat glands
 - Vermillion border
 - Capillaries close to surface, dilated --> red
 - No salivary glands
 - Oral mucosa: squamous non-keratinized epithelium, labial salivary glands in submucosa
 - Lamina propria under mucosa
 - Labial salivary glands
 - Masticatory Mucosa
 - Stratified keratinized squamous epithelium on roof of mouth and gums
 - Respiratory epithelium above it (nasal cavity)
 - Bone in hard palate
 - Tooth
 - Specialized Mucosa
 - Dorsal and lateral borders of tongue covered by mucous membrane
 - Dorsal surface has papillae
 - Bundles of skeletal muscle crossing at right angles
 - Dense lamina propria
 - Filiform papillae - conical, core of lamina propria, keratinized epithelium
 - Fungiform papillae - expanded, smooth, round tops
 - Circumvallate papillae - large circular, deep trench, non-keratinized epithelium

- Taste buds on lateral borders
 - Non-myelinated nerves
 - Serous glands of von Ebner in lamina propria drain into base of trench
- Gingiva and Teeth
 - Muco-gingival junction: parakeratinized (keratin w/ cells)
 - Gingiva
 - Highly keratinized and underlying CT that surrounds the teeth
 - Interdigitation w/ lamina propria increases surface area for epithelial attachment to CT
 - Tooth
 - Enamel is removed because it is decalcified, 95% mineral
 - Dentin: 65% mineral, appears as acellular fibers
 - Cementum: between dentin and periodontal ligament
 - Periodontal ligaments bind alveolar bone to tooth dentin, Sharpey's fibers, extensive vascular supply
 - Cemento-enamel junction
 - Acellular cementum toward root apex
 - Cellular cementum can be differentiated by presence of cementocytes w/in lacunae
 - Bone appears as longitudinally oriented in alveolar socket; appears like immature or woven bone w/ no Haversian systems
 - Dentinal tubules in dentin w/ odontoblasts lining pulp cavity
 - Ameloblasts in enamel
 - Gingival attachment
 - Epithelial attachment to enamel can break down leading to infection
 - Results in loss of alveolar bone, periodontal ligament and eventually the tooth
 - Pulp is inside of teeth
- Salivary Glands
 - General structure
 - Gland has lobules
 - Divided by stromal tissue where blood vessels, nerves and large, interlobular ducts are
 - Interlobular ducts have pseudostratified columnar epithelium
 - Secretory acinar cells and ducts w/in each lobule
 - Parotid (23% of saliva production)
 - Abundance of fat
 - Acinar cells fairly uniform in appearance because secretions are serous
 - Intralobular ducts made of simple columnar epithelium
 - Striated ducts transport water and ions
 - Intercalated ducts connect secretory acini and striated ducts
 - Submandibular (65%) and sublingual (4%)
 - Mix of serous and mucous secretory cells
 - Mucous secretory cells stain lightly, nuclei pushed against basal cell membrane
 - Serous demilune cells at cap of region are brightly stained; fixation artifact because serous and mucous cells adjacent
 - Intercalated ducts too short to be seen in section
 - Sublingual has more mucous acini and fewer intralobular ducts --> stains lighter overall