Anatomy and Classification of Oral Mucosa

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Anatomy of the Oral Cavity

The lips, hard palate (the bony front portion of the roof of the mouth), soft palate (the muscular back portion of the roof of the mouth), retromolar trigone (the area behind the wisdom teeth), front two-thirds of the tongue, gingiva (gums), buccal mucosa (the inner lining of the lips and cheeks), and the floor of the mouth under the tongue are all parts of the oral cavity. The oral cavity is lined with a mucous membrane (oral mucosa), which is made up of a stratified squamous epithelium that is non-keratinized, and an underlying connective tissue layer called the lamina propria. Mucus produced by the primary and numerous smaller salivary glands keep the skin wet. The oral mucosa is rich in nerve endings as well as unique sensory endings for taste on the tongue's dorsal side. The submucosa beneath the mouth cavity's lamina propria is varied. The lamina propria and submucosa are often so identical in substance that they blend together and unnoticed. Only the presence of small salivary glands in a loose textured tissue will identify the submucosa from the lamina propria.

Classification

Lining mucosa, masticatory mucosa, and specialised mucosa are the three types of oral mucosa, each having its own histological, clinical, and functional characteristics. The oral mucosa develops a range of roles, including protecting underlying tissues from mechanical, chemical, and biological stimuli, secretion of vital chemicals, and a sensory function that allows temperature, touch, pain, and taste perception.

Lining Mucosa

The oral surface of the lips, cheeks, floor of the mouth, and ventral surface of the tongue are lined with a stratified squamous non-keratinized epithelium. The external surface of the lip is covered by skin (stratified, keratinized squamous epithelium with hair follicles), the core is formed by skeletal muscle (orbicularis oris muscle), and the internal surface is covered by a mucosal epithelium (stratified, non-keratinizing squamous epithelium). The mucosa is covered by a lamina propria, and the submucosa contains small salivary glands (labial salivary glands). The transition zone between the skin's keratinized epithelium and the mucosa's non-keratinized epithelium should be noted. The vermillion zone is the name given to this transition zone (present only in humans). Long connective tissue papillae extend deep into the epithelium in the transition zone. In these papillae, capillaries are carried near to the surface. Lips appear red because the epithelium is quite thin in this area. Because the vermillion zone lacks salivary glands, the lips must be constantly moisturised (by the tongue) to avoid drying out.

Masticatory Mucosa

On surfaces subjected to abrasion during mastication, such as the roof of the mouth (palate) and gums, a stratified squamous keratinized epithelium is observed (gingiva). This is a longitudinal section of the palate that contains the lip, gingiva, hard palate, and a portion of the soft palate, which is used to investigate bone and the respiratory system. The epithelium over the hard palate is not fully differentiated in this tissue from a term foetus with un-errupted teeth (i.e., not fully keratinized). The epithelium of the hard palate is keratinized in adults in the mouth and soft palate, respiratory epithelium, bone (hard palate), developing teeth, and skeletal muscle.

Specialised Mucosa

A mucous membrane covers the tongue's dorsal surface and lateral borders, containing nerve terminals for general sensory reception and taste perception. The tongue's dorsal surface is covered with small projections called papillae, while the ventral area is devoid of them. The body of the tongue is made up of interlacing skeletal muscle bundles that cross at right angles. The mucosa's dense lamina propria is continuous with the muscle's connective tissue, strongly attaching the mucous membrane to the muscle. Mucous glands in the submucosa are exclusively located on the ventral side of the tongue.

On the tongue, there are two types of papillae. One is the numerous filiform papillae, which are in conical structures with a lamina propria core and keratinized epithelium. Filiform papillae are interspersed with fungiform papillae. They feature narrower bases and expanded smooth spherical crowns. The fungiform papillae can be noticed with the naked eye on the dorsum of the tongue in young children as red dots (because the non-keratinized epithelium is relatively translucent). Because of minor keratinization of the epithelium, these papillae are less visible in adulthood.

The chemoreceptors for the perception of taste are positioned on the lateral margins of taste buds. Non-myelinated neurons from cranial nerves synapse with the receptor and, to some extent, supporting cells of the taste bud. Von Ebner serous glands in the lamina propria, distributed between muscle bundles beneath the papillae. Around the circumvallate papillae, these glands leak into the trench's base.

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