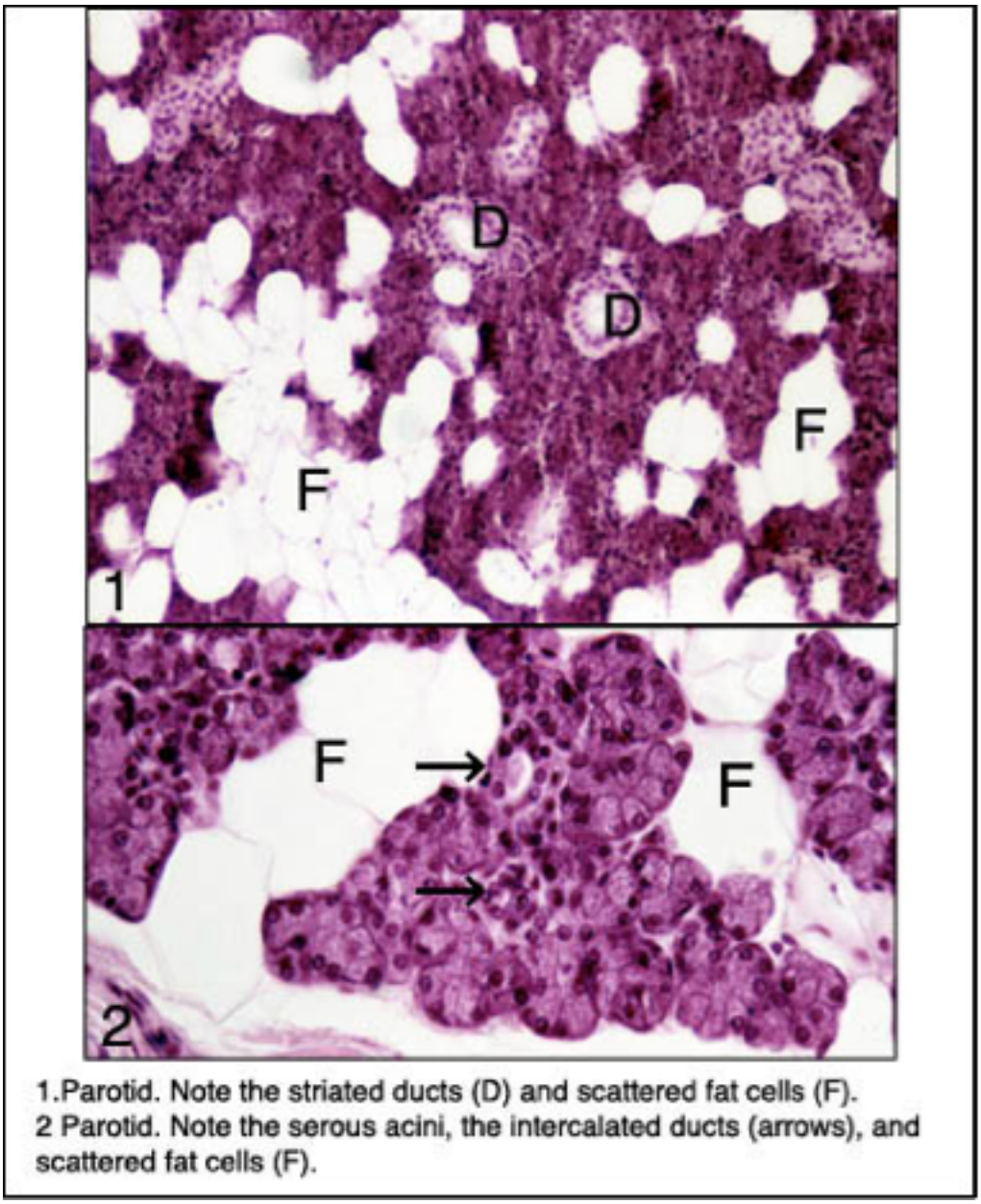
Parotid Gland



1.Parotid. Note the striated ducts (D) and scattered fat cells (F).
2 Parotid. Note the serous acini, the intercalated ducts (arrows), and scattered fat cells (F).

The parotid is the largest of the major salivary glands and is located below and in front of the external ear. The main excretory duct passes through the cheek to open into the vestibule of the mouth opposite the upper second molar tooth. It is a compound tubuloacinar gland and in humans is entirely serous. The adult human parotid contains abundant, scattered fat cells. The parotid is enclosed in a fibrous capsule and subdivided into lobes and lobules by connective tissue septa. A delicate stroma surrounds the secretory units and ducts and contains numerous blood capillaries and scattered nerve fibers. Myoepithelial cells lie between the limiting basement membrane and the bases of the secretory cells and aid in expressing secretions out of the secretory units and into the duct system. Acini are composed of pyramidal-shaped, serous cells with basally placed, oval nuclei, basophilic cytoplasm, and discrete, apical secretory granules. Small channels, the intercellular secretory canaliculi, are found between

serous cells and provide an additional route secretory products can take to reach the lumen. The initial segment of the duct system is the intercalated duct, which is especially prominent in the parotid gland. It is lined by a simple squamous or low cuboidal epithelium and may be associated with surrounding myoepithelial cells. Intercalated ducts are continuous with striated ducts, which are lined by columnar cells that show numerous basal striations. These elaborate infoldings of the basolateral plasmalemma increase the surface area, while the mitochondria associated with the infoldings provide energy (ATP) at the base of the cell and together play a significant role in fluid/ion transport during secretion. The intralobular ducts of all the major salivary glands are intimately related to a surrounding network of capillaries that aid in this function. The intercalated and striated ducts constitute the duct system within the lobule and collectively form the intralobular duct system. The remaining ducts are found in the connective tissue between lobules and are referred to as interlobular ducts. They are continuous with the intralobular ducts and at first are lined by a simple columnar epithelium that becomes pseudostratified and then stratified as the diameter of the duct increases. The surrounding connective tissue becomes more abundant as these ducts join to form the major excretory duct. The distal part of the major excretory duct is lined by nonkeratinized stratified squamous epithelium that becomes continuous with the interior lining epithelium of the cheek.