

# Session (6): Anatomy

# Studies of Season-based Histo-morphometric and Histochemical Changes on the Lacrimal Gland of the One-humped Camel (*Camelus dromedarius*)

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## ABSTRACT

This study aimed to investigate the seasonal histometry and histochemistry of the camel lacrimal glands collected during cold and hot seasons from Omdurman and Tambul slaughterhouses, Sudan. The camel lacrimal gland was surrounded by thick connective tissue capsule that sent trabeculae to divide the gland into lobes and lobules. The glandular secretory units were tubuloalveolar in structure and predominantly serous in nature. The alveoli and tubules were lined by tall simple cuboidal epithelium which was surrounded by myoepithelial cells and reticular interstitial connective tissue. The glandular secretion was drained by intralobular, interlobular and excretory ducts. Insignificantly increased epithelial height and secretory units diameter was observed together with increased interstitial tissue thickness during summer season than that in winter season. Periodic acid Schiff's (PAS) and Alcian blue (AB) reaction intensity increased in the different glandular tissue in summer season as compared to winter season. AB/PAS sequence showed strong PAS reaction in the tubules and intralobular duct, whereas AB reaction was observed in a few epithelial cells. The epithelial cells of the acini were only PAS positive; some cells showed mixed AB and PAS reaction. This might indicate that the glandular tubules secrete acidic mucopolysaccharides and the acini secretion is mainly neutral mucopolysaccharides. It could be suggested that there is increased secretory activities of the Sudanese camel lacrimal gland in hot summer season as compared to that in cold winter season.

**Keywords:** *lacrimal gland, season, camel, histology, histochemistry*