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Histological and histochemical study of superior gland of third eyelid in one humped camel (camelus dromedarius)

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Abstract: Lacrimal glands of mammals synthesize and secrete an aqueous solution in which different chemical substances are present i.e. protein and mucosubstances. Lacrimal proteins include lactoferrin, Lysozyme, and growth factors that maintain the integrity of the eye and promote corneal re-epithelization, while the function of the mucous is to lubricate the ocular surface. In literature, there is no information about histochemical of superior gland of third eyelid in camel. The objective of this study is to determine of histology and carbohydrate histochemistry of gland in one humped camel. For this research, ten camels free of apparent ocular disease were examined to compare the normal morphological properties of these glands in slaughter house. After dissecting, all of glands were characterized and measured (length and width) in left and right side and then were divided into small portion for histological studies. For histochemical studies, Alcian blue and Periodic acid shiff staining were used. Superior gland of third eyelid was oval shape and irregular in outline. The mean length of superior gland of third eyelid was 28.7 ±2.66 mm and 27.2 ±2.39 mm in left and right side respectively in anterior-posterior direction. The mean wide of it was 17.4 ±0.84 mm and 16.1 ±0.87 mm in left and right side respectively in superior-inferior dimension. The mean wide of the left superior gland was greater than the right and difference was significant (P<0.05). Histological examination of superior gland of third eyelid revealed that secretary units of tubuloacinar(alveolar) and serous. The acini were composed of tall pyramidal or columnar cell. The tubules were seen intermingled between the nests of acini and composed cuboidal epithelium. The gland surrounded in T-shaped hyaline cartilage. Histochemical results showing that, goblet cells scattered among the epithelial lining cell in interlobular duct, showed strong PAS and Alcian blue positively. A discrete percentage of acinar cells(about 40%) were PAS positive. Alcian blue moderately stained part of the glandular cell.

Key words: Histochemical, superior gland of third eyelid, camel