**Morphological Characteristics of the Vallate Papillae of the**

**One-Humped Camel (Camelus dromedarius)**

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**abstract**

In this study, the morphology of the vallate papillae of camel was investigated

using gross, light and scanning electron microscopy as well as immunohistochemistry.

Vallate papillae were arranged along an identical line on each side

of the lingual torus and revealed remarkable individual differences. However,

each papilla – round or flat, small or large, single or paired – was surrounded

by a prominent groove and an annular pad. Based on our findings, postnatal

development and formation of new papillae occur in camel. Microscopically,

taste buds were constantly observed along the medial wall epithelium, and in

the papillary wall epithelium on both sides of the secondary groove apparently

separating the vallate papillae. In addition, an aggregation of taste buds was

occasionally observed at the bottom of the lateral wall epithelium. Using SEM,

we observed several pits and microplicae on the surface of papillae as well as

distinct taste pores on the peripheral parts of the dorsal surface. We demonstrated

immunoreactivity of a-gustducin only in mature taste buds. We conclude

that the morphological features and microstructure of vallate papillae are

a characteristic feature in camel compared to other ruminants. These features

might have evolved to assist the camel in the manipulation and tasting of thin

organic stiff plants that grow in its environment and therefore might have

related to the feeding habits of the animal.

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**Anatomic Reference for Computed Tomography of**

**Paranasal Sinuses and Their Communication in the Egyptian**

**Buffalo (Bubalus bubalis)**

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**Abstract**

The purpose of this work was to present an anatomic reference for computed

tomography (CT) for the paranasal sinuses of adult buffalo fit the use of anatomists,

radiologists, clinicians and veterinary students. CT images with the

most closely corresponding cross sections of the head were selected and studied

serially in a rostral to caudal progression from the level of the interdental space

to the level of the nuchal line. The anatomical features were compared with

the dissected heads and skulls. The paranasal sinuses of buffalo comprise dorsal

conchal, middle conchal, maxillary, frontal, palatine, sphenoidal (inconstant,

small and shallow when present), lacrimal and ethmoidal that were identified

and labelled according to the premolar and molar teeth as landmarks. The

topographic description of all the compartments, diverticula, septa and communication

of the paranasal sinuses in buffalo has been presented. The relationship

between the various air cavities and paranasal sinuses was easily visualized.

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