Morphological Studies on the Mouth Cavity of Bakerwali Goat (Capra hircus) of Jammu Region

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ABSTRACT

The present study was conducted on the mouth cavity of six adult Bakerwali goats. The vestibule of the mouth cavity was roomy with thorny papillae populated in the cavum oris. The thorny papillae larger in the vestibule of the upper cheek were absent on the labial part of the vestibule on the upper and lower cheeks. The papilla incisiva was half moon shaped. The hard palate had an average of 10 and 11 numbers of ridges on right and left sides, respectively being separated by a distinct median raphe. The caruncula sublingualis was roughly quadrilateral in shape. The vallate papillae were arranged in two indistinct rows with their number 16 on left and 17 on the right side. Lenticular papillae were thickly populated on the torus linguæ. Various biometrical features of the hard palate and the tongue were recorded.

Key words: Mouth cavity, Hard palate, Tongue, Bakerwali goat

The Bakerwali (Kaghani) goat of Jammu region, reared by the Bakerwal tribe is known for its habit to migrate over long distances. The population of this goat in J.&K. is approximately 8.80 lacs, which shares about 50% of the total goat population of J.&K. Gross anatomical features on the buccal cavity of Bakerwali goat are lacking, so the present study has been conducted in this goat species.

MATERIALS AND METHODS

Six heads of freshly slaughtered Bakerwali goats were procured from the slaughter houses in and around Jammu city. The upper and lower jaws were exposed by incising through the temporo-mandibular articulation and the gross morphological features of the buccal cavity were studied. The biometrical measurements were recorded by using Vernier calliper, non-stretchable thread and measuring scale. The data recorded was put to standard statistical analysis for calculating means and their standard errors (Snedecor and Cochran, 1994).

RESULTS AND DISCUSSION

The hard palate constituted the major portion of the roof of the mouth cavity in all the goats. It was narrow at the tip, more narrower at its middle part to become again broader at its terminal part in contrast to cattle (Baba et al., 2000; Maala et al., 2007) and Black Bengal goat (Hemram and Ray, 2009) where both the extremities of the hard palate were wider with a constricted middle part. This unique shape might help in vetero-legal cases. The anterior two third of the hard palate was traversed by transverse ridges (rugae palatinae) which were 10 on right and 11 on the left side being separated by a distinct median raphe (Fig. 1). The papilla incisiva was half-moon shaped (Fig. 2). Three nodules were observed arranged in a roughly triangle like fashion caudal to the papilla incisiva.

The vestibule was roomy with thorny papillae populated in the cavum oris (Fig. 1). These were larger in the vestibule of the upper cheek. However, no thorny papillae were detected on the labial part of the vestibule of the upper and lower cheeks. Papilla salivalis was well developed and located opposite to the upper 5th cheek tooth. The caruncula sublingualis was roughly quadrilateral in shape (Fig. 3). Caudal to caruncula sublingualis, three papillae were present on the right and only one papilla on the left side. However, presence of such additional papillae was not reported in ruminants. These might be the openings of the minor salivary ducts. The frenulum linguæ was well developed.

The tongue presented three parts viz. apex, body and root. It had a pink color with a sharp rounded anterior edge. The tip of the tongue was spatula shaped closely
resembling that of horse (Fig. 4). The body presented a well developed torus linguae and fossa linguae (Fig. 4) as also reported in large ruminants (Nickel et al., 1979). The mucous membrane of the tongue presented filiform, fungiform, vallate, lenticular and conical papillae. Foliate papillae were absent. The vallate papillae were arranged in two indistinct rows on the mid-lateral aspect of the torus linguae with their average number 16 on left and 17 on the right side. Lenticular papillae were thickly populated on the torus linguae. Fungiform papillae on the lateral sides of the body of the tongue were large sized as also seen in Black Bengal goat and Garole sheep (Hemram and Ray, 2009). Some fungiform papillae were also observed on torus linguae and ventro-lateral aspect of the tongue. Caudally directed filiform papillae populated throughout the length of the tongue except at the root. The root was connected with the soft palate by two lateral mucosal folds, the palatoglossal arches.

The mean biometrical values of the hard palate i.e. number of transverse ridges; length of the hard palate; width of the hard palate at the anterior part, middle part, caudal part and at the narrowest part; length of the papilla incisiva; width of the papilla incisiva and length of the dental pad were recorded as right =10, left =11; 11.80±1.05 cm; 2.29±0.59 cm, 2.93±1.10 cm, 3.82±0.79 cm and 2.0±0.09 cm; 0.58±0.97 cm; 0.62±1.00 cm and 1.51±1.31 cm, respectively. Similarly, length of the tongue; width of the tongue at the tip, at the middle of the body, at the level of the vallate papillae, at the middle of the torus linguae and at the root and thickness of the tongue at the tip, at the middle of the body, at the level of the vallate papillae, at the middle of the torus linguae and at the root were recorded as 13.5±5.71 cm, 1.87±2.61 cm, 2.30±1.17 cm, 3.04±5.66 cm, 3.00±2.11 cm and 2.16±1.07 cm, 0.19±1.07 cm, 2.03±2.08 cm, 3.39±0.61 cm, 3.28±0.97 cm and 2.10±1.19 cm, respectively.

REFERENCES


