HISTOMORPHOLOGIC STUDY ON SWEAT GLAND OF SKIN IN DECCANI SHEEP

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ABSTRACT

In Group-I (0-3 m) the sweat glands were deeply located in dermis. The secretory were lined by cuboidal cells. The long excretory duct opened into the neck of the wool follicle above the opening of sebaceous gland. Type I glands showed secretory cells with simple low cubodial epithelium. Type II sweat glands presented secretory cells of high cuboidal type. The histoarchitecture and type of sweat glands in group II, group III and group IV were similar as that of group I.

Key words: Histomorphologic, Sweat gland, Deccani sheep.

A very meager information is available on the histology of sweat glands in sheep in literature. Therefore the present study was undertaken to explore the histomorphological details of the sweat gland in Deccani sheep with reference to age.

The study was conducted on twenty-four Deccani sheep. The animals were grouped into four groups as per age 0-3 months, 4-6 months, 7 to 9 months and 10-12 months. The skin samples from loin region were collected and then fixed in ten per cent neutral buffered formalin (Singh and Sulochana, 1978). The tissue were then processed at the laboratory by adopting standard methods of dehydration, clearing and embedding. The paraffin tissue sections of 5 to 6 micron thickness were stained using Haematoxylin and Eosin, Weigert's Van Gieson stain, Weigert's Resorcin-fuchsin stain, Silver impregnation stain and Periodic acid Schiff (PAS) stain (Mukolarjee, 1988). The micrometry of the stained histological sections were conducted by ocular micrometer and mean values were calculated. The data collected was subjected to statistical analysis as per the standard procedure of Panse and Sukhatme (1967).

Group I (0-3 months) – The sweat glands were tubuloacinar deeply located in the dermis below the sebaceous gland. The secretory tubules were lined with flat cuboidal cells with elongated and spherical nuclei with distinct cell membrane.

The presence of myoepithelial cells between the basement membrane and cuboidal epithelium was also reported by Dellmann and Brown (1987) in domestic animals (fig. 1, 2). The average number of myoepithelial cells in a section ranged from 23 to 29 with a mean of 26.03 ± 0.08 (Table 1) could not be compared for want of similar literature.

The long excretory duct opened into the neck of the wool follicle above the opening of sebaceous gland. The homogenous secretory material was observed in the excretory duct. Appearance of two types of sweat glands in the present study on the basis of morphological appearance of apical surface of secretory cells and their measurements were not traceable in the available literature.

Type I glands showed secretory cells with simple low cuboidal epithelium. The apical surface of the cells was smooth and regular (Fig.1). The nuclei were oval to elongated in shape. The basement membrane was distinct. Myoepithelial cells were elongated and distinctly seen in longitudinal section of sweat glands. Length, diameter and depth of glands ranged

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from 6.53 to 12.78 μ with a mean of 10.13 ± 0.01 μ, 3.95 to 5.10 μ with mean of 4.35 ± 0.09 μ and 55.00 to 70.00 μ with a mean of 65.00 ± 2.00 μ respectively. (Table 1).

Type II sweat glands presented secretory cells of high cuboidal type. The nuclei were elongated to round in shape apical secretory caps projected into the lumen of the gland (Fig 2). The elongated myoepithelial cells were conspicuous between the base of the cells and basement membrane. The basement membrane was very distinct. The length, diameter and depth of such glands ranged from 8.89 to 14.10 μ with a mean of 12.10 ± 0.11 μ, 4.47 to 6.67 μ, with a mean of 5.65 ± 0.08 μ and 60.00 to 80.00 μ with a mean of 68.05 ± 2.12 μ respectively (Table 1). It could not be compared for want of similar literature. The histoarchitecture and type of sweat glands in group II, group III and group IV was similar as that of group I. Only difference observed was in the dimensions as length, diameter and depth which was shown in Table 1.
Fig. 1
Photo Micrograph of a section of the skin of deccani sheep showing:
  a) Epidermis
  b) Elastic fibres
  c) Secondary crimp follicles.
  d) Sebaceous gland
  e) Papillary layer
  (Verhoeff's stain stain, x 100)

Fig. 2
Photo Micrograph of a section of the skin of deccani sheep showing:
  a) Reticular fibres.
  b) Primary kemp wool follicles.
  c) Secondary kemp wool follicles.
  d) Sweat gland
  (Silver impregnation stain, x 100)

REFERENCES