The Asian Journal of Animal Science (Dec., 2008 to May, 2009), Vol. 3 No. 2 : (116-119)

RESEARCH PAPER

Developmental histomorphology of testes in goat

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Accepted : September, 2008

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ABSTRACT

Gross morphological measurement of testes, both left and right in buck with histological studies, describing seminiferous tubules, myofibroblast, reticular fibers carried out. The testis has two surfaces, two borders and two ends. Histologicaly testis shows seminiferous tubules, leydic cells, genotypes, spermatogonia, primary spermatocytes, secondary spermatocytes, spermatids and sperms were studied using staining methods. Heamatoxylene Eosin stain, Van Gieson's stain and Silver Impregnation stain. The above studies were carried out in postnatal developmental stages *viz*, Pre pubertal, pubertal and post pubertal.

Key words : Histological, Morphological, Testes, Buck, Seminiferous tubules.

Gross anatomy of testes has been studied by Getty (1975), Maurya (1968) in domestic. animals and buffalo bulls, respectively. Similar studies have been carried out in buck by Bhaishya *et al.* (1987), Gupta *et al.* (1992), Giri *et al.* (1994) and Samarah *et al.* (1997) in different breeds of goats. Histology of testes was studied by Dhingra (1980), Raja and Rao (1982), Sane *et al.* (1982) in different ruminants and Bordoloi and Dhingra (1983), Bhaishya *et al.* (1987), Kakde and Singh (1989) in buck, but no work has been reported in different stages of postnatal development in buck *viz.* pre-pubertal, pubertal and post pubertal. This study focused on postnatal developmental changes in testes of bucks.

MATERIALS AND METHODS

The present study was conducted on 18 bucks of different age groups purchased from livestock farm, COV AS, Parbhani and local market. The bucks were grouped into pre pubertal (3 to 7 months), pubertal (8 to 24 months) and post pubertal (above 24 months). The organs were dissected carefully so that the maximum length, maximum width and maximum thickness were recorded by vernier caliper and electronic balance.

F or histological studies, 5 mm thick samples were collected, 10% formaline, 10% Neutral buffer formaline, Bouine's fluid and Zenkers fluide were used as fixative. Ascending grade of alcohol was used for dehydration of tissues while paraffin wax of melting point 58°c to 60°c for making the blocks. Section were cut 3 to 5 micron thikness with the help of manually operated microtome machine and stained with Harries Hematoxyline and Eocine stain (Mukherjee 1990), Wrieger's Van Gieson stain (Mukherjee 1990) and Silver impregnation stain.

RESULTS AND DISCUSSION

The testes were long and elongated shape solid glands presented in attached and free borders. Each testis present two surfaces, two borders and two ends. Lateral surface was attached with the body of epididymis. The head of epididymis occupied the upper end, the lower end was slightly thicker and was connected to tail epididymis. The testis was covered by tunica albugenia and tunica vaginalis. Similar were the findings of Getty (1975) and Frandson (1986) in bucks.

In prepubertal buck, length, width, thickness (cm) and weight (g) of left testis was 2.67±0.13, 1.79±0.04, 1.21±0.06 and 3.06±0.07 g, respectively, while in right testis was 2.62±0.11, 1.74±0.04, 1.19±0.06 and 2.90±0.33 g, respectively. In pubertal buck length, width, thickness (cm) and weight (g) of left testis was 5.03±0.13, 3.17±0.04, 2.63±0.06 and 26.0±27.06 g, respectively, while in right testis were 5.00±0.11, 3.15±0.04, 2.62±0.06 and 25.49±0.33 g, respectively. In post pubertal buck length, width, thickness (cm) and weight (g) of left testis was 5.57±0.13, 3.7l±0.04, 2.84±0.06 and 50.13±0.72 g, respectively, while in right testis was 5.57±0.11, 3.69±0.04, 2.72±0.06 and 47.56±0.33 g, respectively (Table 1). The present results were less or more similar to the values reported by Bhaishya *et al.* (1987), Giri *et al.* (1994), in Ganjam breed, Sarmrah *et al.* (1997) and Gupta *et al.* (1992) in buck.

In parenchyma of testis presented seminiferous tubules, which were closely arranged by a thin basement membrane. The basement membrane consisted of myofibroblast, reticular fibres. The leydic cells or interstitial tissues were present in between seminiferous tubules. The epithelium of seminiferous tubule was a