

Morphometric and volumetric ratio of testicular compartments in goat according to scrotal configuration

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Morphological modifications have been observed in the testis during the spermatogenic process, such as enlargement of the diameter, space and volume of the seminiferous tubules, consequently increasing the weight of testis. Seminiferous tubules diameter constitute an important way to spermatogenic activity in studies on development of testis. Therefore, the diameter of seminiferous tubules is evolved with progressing of the age and exhibits discrete alterations when the sexual maturity begins. The aim of the study was to evaluate the morphometric characteristics of the seminiferous tubules and determine the volumetric ratio of testis compartments in goat with simple and bipartition scrotum. Eighteen goats with age between 1 and 1.5 years-old, without defined breed, were classified according to the scrotal configuration in three groups (GI – without scrotal bipartition, GII – with bipartition up to 50% of testicular length and GIII – with bipartition more than 50% of testicular length). The animals were euthanized and the testicles fixed in Bouin solution during 24 hours. Fragments from testicles were processed routinely and embedded in paraffin. Sections were cut at 3 micrometer thickness, stained in hematoxiline and eosine and mounted on glass slides. The slides were evaluated from captured images (Leica Qwin). The tubules diameter and height of the seminiferous epithelium were observed in 30 transversal sections in increase of 400x. The total length of the seminiferous tubules was determined by the formulation: total tubules volume/ $\pi \cdot R^2$. Volumetric ratio of testicles compartments was gotten using a reticulum with 441 points. 20 spaces in increase of 400x in a total of 8.820 points for animal were analyzed. Data were analyzed using Student-Newman-Keuls test ($p < 0.05$). The value from tubular diameter were 215.49 micrometer for GI, 217.34 micrometer for GII and 220.32 micrometer for GIII ($p > 0.05$) and height of the seminiferous epithelium were 60.23, 60.98 and 73.12 micrometer for GI, GII e GIII respectively ($p > 0.05$). The total length of seminiferous tubules showed differences ($p < 0.05$) for GIII (2,488.85 meters) when compared to GII (2,011.06 meters) and GI (1.955.01 meters). The volumetric ratio of intratubular compartments (87.57% for GI, 86.69% for GII and 87.54% for GIII) and extratubular (13.60% for the GI, 12.38% for GII and 12.08% for the GIII) not shown statistics different ($p > 0.05$) among groups. Therefore, the Seminiferous epithelium showed to be different ($p < 0.05$) because the GIII measured 73.44%, GI 68.94% and GII 71.52%, respectively. Significant differences were observed in the total length of the seminiferous tubules, height and volume of seminiferous epithelium allows inferring that the group GIII with the highest levels of spermatid production.

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