MICROMORPHOMETRICAL INDEXES OF BURSA FABRICII IN DOMESTIC TURKEY DURING POSTNATAL ONTOGENESIS

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For better understanding of its growth, development and function, it is necessary to know the micromorphometrical changes of its structures in ontogenesis. These changes are relatively well studied in chickens, ducks and quails. The paper investigates micromorphometrical indexes of bursa Fabricii in domestic turkey during postnatal ontogenesis.

In the work the classical histological methods of research were used. In sections made of lots largest width and height of bursa Fabricius we established an indexes of area occupied by wall and lumen, and the number of follicles (lymphoid lobules) and an area occupied by cortex and medulla. We calculated the total number of folds in mucosa.

The bursa of Fabricius in turkey is a blind saclike structure which has wall and lumen. In domestic turkey area of bursal wall greatly exceeds the area of the bursal lumen in all age groups. The wall of the bursa of Fabricius in turkeys is composed of the three following basic layers: thin collagenous serosal layer; muscularis; mucosa - comprises the greater portion of the thickness of the wall in all age groups of birds. In daily domestic turkey, the index was 94,49 ± 1,73% and gradually increased to 28 days old (98,01 ± 0,59%). The bird aged 35 to 180 days mucosa area almost unchanged (97,30 ± 1,22% - 97,50 ± 0,57%). Starting with the 210-day age the index of mucosa decreases and in 330-das old birds it was 48,25 ± 9,26%.

The bursa of Fabricius in turkeys is consisted of long thick mucosal folds (plicae) surrounding a lumen. Different shape of mucosal fold like elongated, leaf, club, sessile, was observed. Some of them with secondary branches, small folds mainly conical or triangular. Number of folds of mucous membrane of bursa Fabricius in domestic turkey aged from one to 240 days is almost the same. In older birds this index decreases.

In the mucosa the bursa of Fabricius possess follicles closely packed together (lymphoid lobules) that provide its function as the central organ of hematopoiesis and immunogenesis. Their number and area vary in different age groups of domestic turkey. In the birds of one day old index of lobules quantity is 185 ± 33. This index increases to 90-days old birds (338 ± 75). In older birds it reduces, and in the 330-das old turkeys there can be single lobules. Particularly significant decrease in this index occurs in 270-days old birds. Each follicle can be divided into two parts, the cortex and the medulla. In all age groups except domestic turkey of 330 das, cortex has greater area than medulla.

Follicle area increases from one day old (0,033 ± 0,008 mm 2) to 150-days old domestic turkey (0,343 ± 0,044 mm2). In turkeys 180-240 days of age, this index is almost like in 150-days old, and in older birds it decreases. The area occupied by follicles in the mucosa of bursa Fabricius unevenly increased to 180 days old, and in older birds, this index decreases.

Indexes of the area occupied by the mucous membrane in the wall of bursa Fabricius well correlated with the area of follicles in it: r = 0,979; t = 25,582 at tcrit = 2,160 ($p \leq 0,05$). Since t> tcrit, the pair correlation coefficients are statistically significant. Thus, micromorphomerical restructuring of mucosa occurs due to changes in follicle size. This confirms data from other researchers that follicles in mucosa are the basic functional units of the bursa of Fabricius.

We found that indexes change occurs in three stages. In the first and third stage of some indexes may increase or decrease, and in the second – could remain stable. Changes of

micromorphometrical indexes vary for different structures of bursa Fabricii. Changes of micromorphometrical indexes in the first and second stages associated with the processes of growth and morphofunctional maturity of bursa Fabricii, and in the third reflect the process of involution.

Bursa Fabricii, domestic turkey, micromorphometrical indexes