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DYNAMICS OF CHANGE IN THE MORPHOMETRIC INDICATOR OF THE MUSCULARSTOMACH IN POSTNATAL ONTOGENESIS OF CHICKENS

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Abstract
The dynamics of changes in absolute parameters of linear parameters of the muscular stomach in the postnatal ontogenesis of domestic chickens has been studied. It was found that the absolute index of linear parameters increases more intensively from the first 3 days to the 16-day age of postnatal ontogenesis and up to 280 days, this process continues in stages, and does not change significantly at 420 and 570 days. It was revealed that the absolute index of the muscular stomach increases intensively from 3 days to 85 days and reaches the highest index in 280 days of postnatal ontogenesis. It was determined that the growth coefficient of morphometric parameters of the muscular stomachs of chickens in the period from 3 days to 570 days of age is significantly higher in their mass than linear parameters.

Keywords: Domestic chickens, gastric muscle, length, width, thickness, weight, postnatal ontogenesis, absolute value, growth coefficient.

Introduction

The bone system has a lot to do with the production of stable substances in the body, especially the metabolism of calcium, phosphorus and many other macro- and microelements, directly in the next period of natural living conditions, especially the problems related to the climate, geographical relief, and the work of settling in the skeleton, the adolescent forces falling into them. develops in dependence.

The muscular part of the stomach of chickens lies behind the liver, especially in chickens it is located horizontally in the chest-abdominal cavity, and in roosters it is somewhat vertical [1, 9,].

The muscular part of the stomach has a rounded concave shape, has a firm consistency, is voluminous, and has a deep blue-blue color. On the muscular stomach, the body, the right and the side of the thigh are well visible. rounded corners formed from front and rear blind bags; The upper and lower ends of the crop are distinguished by strong side muscles. In the central part of the muscular stomach is a narrow slotted cavity, and the third part is expanded and forms a blind sac. The anterior blind sac passes upward without a clear border, and the posterior blind sac is united with the lower end. The anterior blind pouch is opened. Next to the anterior cecum, a two-finger

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incision is made through the muscular part of the stomach. The cecum is not very well visible in chickens, the muscular stomach is defined as an "S" shape [2,14].

According to the researchers, the cuticle of the muscular part of the stomach of birds consists of the glands and cells of the gastric epithelium, and in the section, the wall of the glandular part of the stomach is located between the thick muscular wall and the cuticular cover, the elegant, somewhat bright epithelial layer is clearly visible. In this case, each intermediate muscle of the stomach muscle department is located on a smaller blind tumor of the stomach [8, 11].

The wall of the muscular stomach of chickens is also composed of mucus, muscle and serum membranes. The surface of the mucous membrane is uneven, forming elongated folds with a pronounced bulge, and consists of private mucous and submucosal layers. In the area of the blind sacs, it also has a reticulated appearance due to the presence of transverse folds. The private layer of the mucous membrane is made up of sparse and reticular tissues, inside of which there are a large number of tubular glands. According to the authors, these glandular structures are considered analogs of the pyloric glands of the mammalian stomach with a modified appearance. In chickens, ducks and geese, they are grouped and their channels open to the pit of the stomach [12,13].

The covering epithelium of the muscular stomach is single-layer cylindrical, enters the pit of the stomach, and they are well differentiated under the keratinous cuticle, and at the bottom of them open simple tubular glands. Glands are formed from single-layer cylindrical epithelium, their base, body and neck are different. The bottom of the gland is covered with young cells, among which mitoses occur, as they approach the body and neck, gland cells differentiate. Up to thirty simple tubular glands are opened in each pit of the stomach, their secretion mixes with pit secretion and hardens in the form of columns made of glycoproteins. As a result of the mixing of both secretions, horizontal bright and dark lines can be seen. In general, the composition of the cuticles of the muscular stomach of birds is very complex and unique [5,15].

In the results of the research conducted in recent years, it was observed that the thickness of the cuticle is different in different parts of the muscular part of the stomach of chickens. According to the authors, the thickness of the cuticle can also depend on the type of feeding of chickens. In the experiments, it was found that the thickness of all layers of the muscular stomach wall in domestic geese is slightly higher in those fed mainly with grain food compared to those fed grass [3, 4].

The myocytes of the muscular part of the stomach store a lot of hemoglobin, so it has a dark-red color with purple dots. As a result of the rapid contraction of the muscular part of the stomach of chickens, the food mass is rubbed and crushed. The breakdown of nutrients occurs in this department due to the enzymes of the glandular stomach, self-produced fluid, pancreas, intestinal juice and bile fluid. They pass to this section through a tight sphincter between the stomach and the duodenum [6.11].

Inspection methods and materials

Scientific investigations were carried out on the muscular stomach of chicks and chickens belonging to stages 3, 16, 35, 35, 120, 168, 280, 420, 570 of postnatal ontogenesis. Young, clinically healthy and moderately obese poultry were selected for sampling. Muscle stomachs of chicks and chickens of appropriate age were taken for the purpose of the tests.

General morphological methods were used to dissect the muscular stomach and determine its morphometric dimensions.

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All numerical data obtained as a result of scientific investigations were subjected to mathematical processing according to the method of E.K. Merkureva.

The growth coefficient was calculated to determine the dynamics of changes in muscle stomach parameters depending on age.

Mathematical-statistical analysis was performed using Student's and Fisher's criteria in Microsoft Excel computer spreadsheet.

Results and their analysis

The absolute indicator of the length of the muscular stomach of chickens increased slightly from 3 days to 16 days of postnatal ontogenesis, reaching from 1.97±0.23 cm to 2.43±0.38 cm (K=1.23; r<0.02), the gradual continuation of this process up to the next studied 280 days, and in 35 days - by 2.86±0.28 cm (K=1.18; r<0.02), at 85 days – by 3.77±0.3 cm (K=1.32), at 120 days – by 4.12± by 0.63 cm (K=1.09), in 168 days – 5.04±0.93 cm (K=1.22; r<0.02) ha, in 280 days it was noted to be 5.91±1.06 cm (K=1.17). This indicator of the muscular stomach in young people after 280 days does not change much compared to younger ones, that is, at 420 days - 5.68±0.63 cm (K=0.96; r<0.01), at 570 days - 5.69±1, It was observed to be 24 cm (K=1.0). It was found that the coefficient of growth of the absolute index of muscle stomach length increased up to 2.89 times during the period from 3 days to 570 days of postnatal ontogeny of chickens.

The absolute index of the width of the muscular stomach in the first 3 days of postnatal development of chickens was 19.12±0.4 cm, in the 16th day - up to 20.36±0.4 cm (K=1.06), in the 35th day - 24.52±0, up to 33 cm (K=1.2; r<0.02), at 85 days - It was observed that it increased to 36.28±0.55 cm (K=1.48; r<0.02), and increased to 43.48±0.46 cm (K=1.2) in 120 days. This indicator of the muscular stomach increases imperceptibly until the next 280 days of postnatal development to 47.58±1.05 cm (K=1.09; r<0.03) at 168 days, to 56.24±0.56 cm (K =1.18), in 420 days - 48.04±0.61 cm (K=0.85), and in 570 days - 44.4±0.73 cm (K=0.92). It was noted that the growth coefficient of the absolute index of the width of the muscular stomach reaches 2.32 times during the period from 3 days to 570 days of postnatal ontogeny of chickens.

The absolute indicator of the thickness of the muscular stomach is a slight increase from the 3rd to the 16th day of the postnatal ontogeny of chickens, that is, from 6.06±0.1 cm to 15.58±0.33 cm (K=2.57; r<0.02) and a slight slowing down of this process up to 120 days, and at 35 days - by 15.6±0.26 cm (K=1.0), at 85 days – by 18.68±0.23 cm (K=1.19; r<0.02), at 120 days – by 21.66± It was observed to be equal to 0.34 cm (K=1.16; r<0.02). This indicator of the muscular stomach is significantly increased at the 168th and 280th stages of development compared to the younger age and, respectively, 27.46±0.51 cm (K=1.27; p<0.02); 38.79±0.3 (K=1.41; r<0.02), in 420 days - up to 35.8±0.61 cm (K=0.92), in 570 days - 33.48 An insignificant decrease to ±0.48 cm (K=0.94) was noted. It was found that the growth coefficient of the absolute index of muscle stomach thickness increased up to 5.52 times from 3 days to 570 days of postnatal ontogeny of chickens.

The absolute indicator of the weight of the muscular stomach in proportion to its linear dimensions shows a slight increase from the first 3 days of the postnatal ontogeny of chickens to the 85th day and from 1.91±0.01 g to 3.94±0.04 g at the 16th day (K=2.06; r <0.01), in 35 days - It was observed to increase up to 4.67±0.07 g (K=1.19), in 85 days - up to 15.62±0.35 g (K=3.34; r<0.02). The growth of this indicator of the muscular stomach from 120 days to 280 days is almost uniform and at 120 days - 21.63±0.4 g (K=1.38; r<0.02), at 168 days - 30.18±0.76 g (K=1.39), in 280 days – It

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reached 43.48±0.39 g (K=1.44; r<0.01), did not change significantly in the next studied young people, i.e. in 420 days – by 41.11±0.77 g (K=0.95) , it was found to be equal to 39.56±0.88 g (K=0.96; r<0.02) in 570 days. It was noted that the growth coefficient of the weight of the muscle stomach of chickens increased up to 20.71 times during the period from the first 3 days to the 570th day of postnatal ontogeny.

Summary:

- it was observed that the absolute index of the linear dimensions of the muscular stomach of chickens increased slightly from the 3rd to the 16th day of postnatal ontogeny, this process continued gradually until the next studied 280 days, and remained almost unchanged at 420 and 570 days;
- it was found that the absolute index of the weight of the muscular stomach increases rapidly from the 3rd to the 85th day of postnatal ontogeny, and reaches the highest index at the 280th day;
- it was noted that the growth coefficient of the morphometric indicators of the muscular stomach of chickens is higher than that of its linear dimensions during the period from 3 days to 570 days of postnatal ontogeny.

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