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THE DYNAMICS OF CHANGING OF THE SHEEP GLOSSARY MUSCLE

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Abstract: The morphometric parameters of some muscles affecting the leg joints during the physiological stages of the postnatal ontogeny of Hisori sheep in different natural conditions were studied and it was determined that the muscles exhibit specific dynamics of change in connection with the anatomo-topographical position, scope of their function and living conditions.

Key words: Hisori sheep, postnatal ontogeny, muscle, extensors, growth coefficient, absolute index, morphometric, living conditions.

Enter. In addition to the fact that the morphological indicators of muscle tissues depend on their anatomo-topographical location and the range of motion, they are also influenced by the natural living conditions of organisms. Also, the main part of meat products consumed by humans is made up of cross-sectional muscle tissues, and their quality and quantity depend primarily on the age of animals and natural living conditions, so their morpho-chemical composition is also important.

The body of sheep is characterized by rapid exchange of substances and energy, therefore, it consumes more nutrients per 1 kg of live weight compared to cattle V.G. As a result of Dvashvili's research, he found his proof. The author notes that the level of energy and protein metabolism depends on the different direction and physiological state of sheep, and rams are higher than females, and the energy of food and nutrients in young sheep is more efficient than that of older animals [1].

The daily movement of animals raised in pastures with different geographical reliefs is different, which first of all affects the morphofunctional characteristics of the movement organs, and also affects the neuroendocrine and other systems. For example, the more active an animal is, the faster the development of its digestive system organs [4].

Despite the fact that there is a correlative relationship between the low amount of muscle fibers and the high degree of hypertrophy, strong hypertrophy of muscles reduces the ability of fibers to withstand physical weight, in turn increases susceptibility to stress and causes deterioration of meat quality.

Experts and researchers have long been interested in the study of factors affecting the dynamics of changes in the morphofunctional properties of skeletal muscles at various physiological stages of the postnatal development of the body. In particular, the growth dynamics of skeletal muscle tissue of sheep during postnatal ontogenesis was studied [2], and its weight increased rapidly from the newborn stage to 4 months, then it slowed down in the period up to 10 months, and at 12 months, its relative index increased again. The author associates this situation with the manifestation of sexual dimorphism.

As a result of scientific researches conducted by researchers [3] focused on the general problems of animal ecological morphology and postnatal ontogeny, it was found that the main morphological indicators of deer change according to age throughout the life of the animal and

are subject to a certain law. According to the authors, from the period of physiologicization of the animals, the gender-specific characteristics of the linear dimensions and weight begin to stabilize, and the formation of the exterior is completed.

Scientific research conducted by R.V.Tambovtseva shows that the growth, development and specialization of skeletal muscles in postnatal ontogeny is a complex organizational process, which extends from the birth of the organism to the completion of sexualization and the period of full adulthood. The author states that the formation and development of skeletal muscles is influenced by the hormonal system [5].

Authors [6] identified previously unclear individual development laws of humans and animals, and individual development consists of 3 stages, namely embryonic, postnatal and mature periods. One of the laws they interpret is that the chemical composition of cells, morphological and physiological characteristics of tissues and organs differ from each other at each stage of development, and each stage has its own biological rhythm.

The morphometrical peculiarities of tubular bones of autopodies of sheep in Karakul and Hissar breeds at postnatal ontogenesis were studied using morphometrical methods. Proximal and distal joint cartilages of bones were thicker at new-born animals and until 60 months of age it gradually became thinner. The terms of ossification of metaepiphyseal cartilage of tubular bones of autopodies at postnatal ontogenesis depended on their placement in the skeleton of extremitieshabitat conditions and breed of animals were determined [8]

Inspection method and materials. The research work was carried out on the muscles that affect the joints of the hind legs of Hisori sheep in Boysun district of Surkhandarya region. Four-headed extensor muscles of the thigh were taken from animals at 3-day, 3-, 6-, 12-, 18-, 36-, 60-month stages of postnatal ontogeny for scientific tests.

The length, thickness, width and weight of the samples taken for inspection are taken. Their weights were measured on a VLTK-500 electric scale with an accuracy of 0.01 g and their linear dimensions were obtained. The general morphological methods used and introduced by N.P. Chirvinsky were used in the treatment of muscles and determination of their morphometric indicators. Laboratory analyzes "Animal anatomy, histology and pathological anatomy" department of SamVMI, the toxicology laboratory was conducted at the State Center for the diagnosis of animal diseases and food safety in the Samarkand region.

All numerical data obtained as a result of scientific investigations were subjected to mathematical processing according to the method of E.K. Merkureva, and the following indicators were determined:

arithmetic mean value: (5);

square deviation of the arithmetic mean value (6);

arithmetic mean value error (7);

coefficient of variation (8);

reliability criterion (9).

Reliability level - p (R) was found according to Student's table.

To determine the dynamics of the muscle depending on age, the growth coefficient was calculated. The growth coefficient was determined by dividing the length, width, thickness, weight of the bones of an adult animal by the corresponding indicators of the bones of a young animal, and the entire examined period of postnatal ontogenesis was determined by the formula (10) developed by K.B. Svechin [163]:

K – growth factor;

W is the absolute index of the bone of an adult animal;

V0 is the initial index of the bone.

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

The obtained results and its discussion. As a result of scientific investigations, it was observed that the linear sizes and absolute weights of the muscles affecting the leg joints of Hisori sheep show specific dynamics of change according to the anatomo-topographical position, the scope of the task performed, and the natural living conditions of the animals at various physiological stages of postnatal development.

The absolute index of the length of the large round muscle of Hisori sheep reared in adequate natural conditions increased from 9.48 ± 0.11 cm to 15.12 ± 0.18 cm from 3 days to 3 months of postnatal ontogeny, or the growth coefficient increased by 1.59 times, and at 6 months reducing it to 14.7 ± 0.33 cm (K = 0.97), 16.0 ± 0.35 cm (K = 1.08) at 12 months, and 18.56 ± 0.29 cm at 18 months (K = 1.16) was observed. It was noted that the absolute size of muscle length decreased to 15.86 ± 0.24 cm in 36-month-old sheep, and increased to 17.38 ± 0.22 cm (K = 1.09) at 60 months, but was lower than the value at 18 months. The coefficient of growth of the absolute index of the length of the large rounded muscle was observed to increase by 1.83 times from 3 days to 60 months of postnatal ontogeny..

The absolute size of the width of the large round muscle is 0.94 ± 0.04 cm in the first 3 days of postnatal ontogeny of sheep, with a rapid increase up to 3 months (2.5 ± 0.06 cm, K = 2.65), almost unchanged at 6 months (2.52 ± 0.08 cm), increased to 3.1 ± 0.09 cm (K = 1.23) at 12 months, to 3.22 ± 0.06 cm (K = 1.03) at 18 months done. This measure of muscle decreased to 2.62 ± 0.06 cm (K = 0.81) in sheep at 36 months of age and increased significantly at 60 months (3.14 ± 0.08 cm, K = 1.19), from the studied 3 days of postnatal development. It was found that until the age of 60 months, its growth factor is 3.34 times.

The absolute index of muscle thickness is from 0.52 ± 0.02 cm to 0.64 ± 0.02 cm from 3 days to 3 months of postnatal development of sheep, the growth coefficient increases to 1.23 times, and this process continues step by step until 18 months of age, and At 6 months - 0.74 ± 0.02 cm (K = 1.15), at 12 months - 0.72 ± 0.02 cm (K = 0.97), at 18 months - 1.52 ± 0.04 cm (K = 2.11). This indicator of the muscle is reduced at the stages of 36 and 60 months of postnatal development compared to at 18 months (respectively, 1.04 ± 0.02 cm, K = 0.68; 1.06 ± 0.02 cm, K = 1.01), its it was noted that the growth coefficient reached 2.03 times during the studied period from 3 days to 60 months.

The absolute index of the weight of the large round muscle in adequate conditions of sheep of the Khasori breed rapidly increases from the first 3 days to 3 months of postnatal development, from 3.66 ± 0.1 g to 11.5 ± 0.25 g, and the growth coefficient is 3.14 times and to continue this situation until 18 months, that is, at 6 months - 13.1 ± 0.2 g (K = 1.13), at 12 months - 18.28 ± 0.39 g (K = 1.39), At 18 months - 21.26 ± 0.55 g (K = 1.16), at 36 months it decreased to 17.12 ± 0.22 g (K = 0.80), and at 60 months it reached the highest value (22, 1 ± 0.62 g, K = 1.29). It was observed that the coefficient of growth of the absolute indicator of this muscle mass increased by 6.03 times during the period from 3 days to 60 months of postnatal ontogeny.

The absolute index of the length of the large round muscle of Hisori sheep reared in inadequate conditions increased from 8.78 ± 0.12 cm to 14.7 ± 0.23 cm from 3 days to 3 months of postnatal ontogeny, and the growth coefficient reached 1.67 times during this period. Almost unchanged at 6 months
(14.22 ± 0.19 cm, K = 0.96), increasing until the next 18 months, i.e. at 12 months to 15.4 ± 0.27 cm (K = 1.08), at 18 months to 17.62 ± 0 An increase of .28 cm (K = 1.14) was observed. This indicator of the muscle decreases to 15.6 ± 0.28 cm (K = 0.88) at the 36-month stage of postnatal development, remains unchanged at 60 months (15.62 ± 0.23 cm), and its growth coefficient from 3 days to 60 months is 1 It was noted that it reached 77 times.

The absolute thickness of the width of this muscle is 0.86 ± 0.02 cm in 3-day-old lambs, up to 2.23 ± 0.04 cm by 3 months of postnatal ontogenesis, increasing the growth coefficient by 2.59 times, almost unchanged at 6 months (2.22 ± 0.04 cm, K = 0.99), its increase from 12 months, i.e. at 12 months - to 2.66 ± 0.04 cm (K = 1.2), at 18 months - 2.94 ± 0.07 cm (K = 1.1), at 36 months it decreased to 2.4 ± 0.06 cm (K = 0.81) and at 60 months it was 2.84 ± 0.05 cm (K = 1.18) it was determined. It was observed that the coefficient of growth of the absolute index of muscle width increased by 3.30 times from 3 days of postnatal development of sheep to 60 months of age.

The absolute size of the thickness of the large rounded muscle increases from 0.49 ± 0.01 cm to 0.58 ± 0.02 cm (K = 1.18) from 3 days to 3 months of postnatal ontogeny of sheep, and this process continues gradually until 18 months of age. that is, at 6 months - 0.66 ± 0.02 cm (K = 1.13), at 12 months - 0.72 ± 0.02 cm (K = 1.09), at 18 months - 1.36 ± 0, 02 cm (K = 1.88) was observed. The absolute thickness of the muscle is sharply reduced in 36-month-old sheep (0.96 ± 0.02 cm, K = 0.70), almost unchanged at 60 months (0.94 ± 0.02 cm, K = 0.97), all studied stages of postnatal ontogeny during the stages, its growth factor was noted to be equal to 1.91 times.

In inadequate conditions, the absolute index of the weight of the large round muscle of Hisori sheep from 3 days to 3 months of postnatal development increased from 3.34 ± 0.1 g to 10.1 ± 0.32 g, the coefficient of growth increased by 3.02 times, in the next 6 and 12 months, this the process continued without significant deviations (respectively, 12.8 ± 0.37 g, K = 1.26; 16.6 ± 0.65 g, K = 1.31), with a slight acceleration at 18 months (20.0 ± 0.61, K = 1.19) was observed. The absolute index of muscle weight significantly decreased at the 36-month stage of postnatal ontogeny (15.4 ± 0.32 g, K = 0.77), reaching the highest level at 60 months compared to other ages (20.01 ± 0.27 g, K = 1 ,29), it was noted that its growth coefficient increased to 5.99 times during the period from 3 days to 60 months.

Conclusions:

- The linear dimensions and absolute indicators of the weights of the muscles affecting the proximal joints of the front legs of Hisori sheep, in proportion to the physiological state of the animal body, are accelerated during the period up to the first 3 months of postnatal ontogenesis, and the most at the 18-month stage, compared to all the studied ages, regardless of their living conditions. was observed to exhibit a high rate;
- the growth dynamics of the linear size of the muscles of the proximal part of the front leg and the absolute weight of Hisori sheep are directly influenced by their natural living conditions, and it was found to be higher in those with adequate conditions compared to those with inadequate conditions;
- during the period from 3 days to 60 months of postnatal ontogeny of Hisori sheep, which were cared for in adequate and inadequate natural conditions, it was noted that the absolute indicators of the growth coefficient of the muscles affecting the proximal joints of the front legs were higher in weight than those of their linear dimensions.

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