

## CHANGE OF THE MORPHOMETRIC DIMENSIONS OF THE SHEEP'S LOCAL RING AND THYROID AREAS DURING POSTNATAL ONTOGENESIS

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**Abstract:**The dynamics of changes in the morphometric parameters of the ring-shaped and thyroid-shaped parts of the larynx during the postnatal ontogeny of Jaidari sheep was studied. The absolute indicators of the linear dimensions and weight of the annular and thyroid glands have their own dynamics at different physiological stages of postnatal development, the most rapid growth coefficient was observed at the 18-month stage, and the highest indicator was observed at the 60-month stage.

**Key words:**jaydari sheep, hirsute, ring-shaped, shield-shaped, linear size, absolute index, postnatal ontogeny, growth factor.

**Enter:**The development of the organism after birth is directly related to the conditions of the natural environment in which it lives, and this correlation is reflected in the morphofunctional characteristics of organs and tissues.

Morphofunctional changes that occur as a result of physiological processes in the body, like all systems, are also reflected in the morphological state of bones.

The larynx cavity does not correspond to its external structure and resembles an hourglass in shape, which is best seen mainly in the frontal section of the organ. The cavity of the larynx is covered with a mucous membrane from the inside. In the middle compressed part of the larynx, the upper vestibular and lower vocal folds protrude from the front to the back in the horizontal direction. On the basis of the caudal or lower fold, the vocal chords and the muscles of the same name are located on the lateral side. Between the vocal folds (lips) is a sound slit, which is directed from front to back in humans, and from bottom to top (ventrodorsal) in animals, and gives a triangular shape at the angle of the thyroid gland, the corner of the triangle base is located in the vocal fold of the goblet gland [2, 3, 6].

There are many mucous glands in the mucous membrane covering the wall of the laryngeal ventricle, which keep the vocal folds, which dry out during the process of breathing and sound production, constantly moist. In some animals (frogs, monkeys) the laryngeal ventricle acts as a resonator. The comparative anatomy of the larynx, liver, and lungs of some animals has been studied and their specific features have been determined [5].

As a result of the research, the specific characteristics of the larynx of kotos have been noted. According to the author's information, the base of the larynx in these animals is made up of five bones similar to those of cattle. The location and shape of some horns are different from those of bighorn cattle. Differences in the structure of the muscles of the larynx were identified, the ring-shaped muscle above the extensor muscles, and the lateral ring-shaped muscle from the narrowing muscles were somewhat strongly developed. K.A. Vasilev [1].

Thyroid, annular, and both goblet tendons are made of hyaline tendon, and suprahyoid tendon is composed of elastic tendon tissue. The largest is the thyroid uncl. They showed that the weight of laryngeal constrictor muscles is higher than that of dilator muscles, which is due to the specialization of these muscles to perform different functions. It is noted that the weight of the larynx tendons is higher than the weight of the larynx muscles [4].

According to the researchers, the pharynx is relatively long, with a small intermediate arch. The arc of the annular groove is oblique to the plate. The thyroid gland is long. The free end of the cup-shaped branch is divided into two. The top of the larynx is wide, round. The vocal cords are curved backwards and downwards. They are divided into a large front and a small back section through a side pocket. There is also a third pocket. Three groups of muscles affect the larynx: extensor, constrictor and longus muscles. A group of extensor and constrictor muscles surrounds individual larynx, and long muscles surround the entire larynx [7].

**Materials and methods.** The scientific investigation was carried out on the udders taken from Jaidari sheep of the 3, 6, 12, 18, 24, 36, 60 months of postnatal ontogenesis, which were cared for in the farms of Nurabad district of Samarkand region. Young, clinically healthy and moderately obese animals were selected for sampling. For the object of the inspections, the gills of the jaidari sheep belonging to the respective youth were taken.

General morphological methods were used to determine the morphometric indicators of the larynx. Research work was carried out in the laboratory of the Department of "Animal Anatomy, Histology and Pathological Anatomy" of the Samarkand State University of Veterinary Medicine, Animal Husbandry and Biotechnology.

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

Confidence level – p was found by Student's table.

To determine the dynamics of the larynx depending on age, the growth coefficient was calculated. The growth factor was determined by dividing the length, width, thickness, weight of an adult animal's throat by the corresponding indicators of a young animal, and the entire examined period of postnatal ontogeny was determined by the formula (6) developed by K.B. Svechin:

K – growth factor;

W is the absolute index of an adult animal's larynx;

V0 is the initial indicator of the larynx.

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

**Results and their analysis.** The larynx of Jaidari sheep is a large-muscular organ with a complex structure, and it was noted that it develops during different physiological stages of postnatal ontogeny of animals and exhibits specific morphofunctional properties.

Ring-shaped cartilage - cartilago cricoidea is in the back of the larynx, attached to the first ring of the larynx, it has an arcuate cartilage, an articular cavity on the front side and a muscle growth on it.

The absolute index of the ring girth of Jaidari sheep increased slightly from 3 months to 18 months of postnatal ontogeny, and at 6 months - from  $5.0 \pm 0.06$  cm to  $5.8 \pm 0.07$  cm ( $K=1.16$ ;  $r < 0.03$ ), at 12 months -  $6.0 \pm 0.06$  cm, at 18 months -  $7.2 \pm 0.03$  cm ( $K=1.2$ ;  $p < 0.02$ ) and this process continues in stages in later youth reach, i.e. at 24 months – up to  $8.0 \pm 0.04$  cm ( $K=1.11$ ), at 36 months – up to  $8.2 \pm 0.04$  cm ( $K=1.02$ ), at 60 months –  $9.1 \pm 0.03$  cm ( $K=1.11$ ;  $p < 0.03$ ). It was noted that the growth coefficient of this indicator of the ring-shaped toe increases up to 1.82 times during the period from 3 months to 60 months of postnatal ontogeny of sheep.

The absolute indicator of the width of the ring-shaped ankle gradually increases from 3 months to 60 months of postnatal ontogeny, and at 3 months - by  $0.3 \pm 0.02$  cm, at 6 months - by  $0.4 \pm 0.03$  cm ( $K=1.33$ ;  $r < 0.03$ ), at 18 months – by  $0.6 \pm 0.02$  cm ( $K=1.5$ ), at 24 months – by  $0.7 \pm 0.08$  cm ( $K=1.16$ ), at 36 months – It was observed that it reaches  $0.72 \pm 0.05$  cm, at 60 months -  $0.86 \pm 0.07$  cm ( $K=1.19$ ;  $r < 0.03$ ), its growth coefficient increases to 2.86 times during this period.

The absolute indicator of the thickness of the ring-shaped ankle increases stepwise from 3 months to 18 months of postnatal development of sheep, from  $0.2 \pm 0.04$  to  $0.26 \pm 0.05$  cm from 3 months to 6

months ( $K=1.3$ ;  $r<0.04$ ). to  $0.3\pm 0.02$  cm ( $K=1.15$ ) at 12 months, to  $0.4\pm 0.03$  cm ( $K=1.33$ ;  $p<0.03$ ) at 18 months and from in adults, this indicator is almost unchanged and at 24 months -  $0.4\pm 0.05$  cm, at 36 months -  $0.46\pm 0.05$  cm ( $K=1.15$ ), at 60 months -  $0.46\pm 0.06$  it was found to be cm. It was noted that the growth coefficient of the absolute indicator of the thickness of the annulus increased up to 2.3 times during the period from 3 months to 60 months of postnatal ontogeny of sheep.

The absolute size of the weight of the annulus in 30-month-old sheep is equal to  $0.4\pm 0.03$  cm, at 6 months -  $0.5\pm 0.07$  cm ( $K=1.25$ ;  $r<0.03$ ), at 12 months - up to  $0.56\pm 0.05$  cm ( $K=1.12$ ;  $r<0.02$ ), at 18 months - up to  $0.65\pm 0.05$  cm ( $K=1.16$ ), at 24 months -  $0.74$  up to  $\pm 0.03$  cm ( $K=1.13$ ), at 36 months - up to  $0.8\pm 0.02$  cm, at 60 months -  $1.0\pm 0.08$  cm ( $K=1.25$ ;  $r<0.03$ ) was noted to increase up to. It was observed that the coefficient of growth of the absolute indicator of the weight of the ring-shaped head increases up to 2.5 times during the period from 3 months to 60 months of postnatal ontogeny of sheep.

The thyroid gland of the larynx - cartilago thyreoidea is shiny and forms the side wall of the larynx. The right and left plates - lamina thyreoidea dextra et sinistra - join the middle body of the thyroid gland. In the upper part, there are anterior and posterior branches - cornu craniale et caudale, which unite with the cup-shaped bone and the big horn of the sublingual bone. The opening of the thyroid gland plate is filled with tendon, in which there is a hole for the passage of the anterior nerve of the pharynx - foramen thyreoidea.

The absolute index of the height of the thyroid gland increases slightly from the first 3 months to 18 months of postnatal ontogeny of sheep, from  $1.8 \pm 0.03$  cm to  $2.0 \pm 0.06$  cm from 3 months to 12 months ( $K=1.11$ ;  $r<0.03$ ), reaching  $2.8 \pm 0.04$  cm at 18 months ( $K=1.4$ ;  $r<0.02$ ) and continuing this condition gradually without major deviations until 60 months, i.e. at 24 months -  $3.0 \pm$  up to  $0.03$  cm ( $K=1.07$ ), at 36 months - up to  $3.2\pm 0.02$  cm ( $K=1.06$ ), at 60 months -  $3.7\pm 0.03$  cm ( $K=1.15$ ) was noted to increase. It was found that the coefficient of growth of the absolute index of the height of the thyroid gland increases up to 2.05 times during the period from 3 months to 60 months of postnatal ontogeny of sheep.

The absolute index of the width of the thyroid gland increases rapidly until the 18th month of postnatal development of sheep and from 3 months to 6 months from  $4.3\pm 0.04$  to  $4.8\pm 0.03$  cm ( $K=1.11$ ;  $r<0.03$ ), 12 in the month -  $5.1\pm 0.03$  cm ( $K=1.06$ ), in 18 months - up to  $8.0\pm 0.02$  cm ( $K=1.56$ ;  $p<0.02$ ) almost no change of the indicator, i.e. at 24 months - by  $8.0\pm 0.06$  cm, at 36 months - by  $8.2\pm 0.05$  cm ( $K=1.02$ ), at 60 months - by  $8.4\pm 0.03$  cm it was determined. It was noted that the coefficient of growth of the absolute index of the width of the thyroid gland increases up to 1.95 times from 3 months to 60 months of postnatal ontogeny of sheep.

The absolute indicator of the thickness of the thyroid gland is  $1.12\pm 0.02$  cm in 3-month-old lambs, this indicator increases to  $1.14\pm 0.03$  cm in 6-month-old lambs, and  $2.12\pm 0.02$  cm in 12-month-old lambs ( $K=1.85$ ;  $r<0.03$ ), almost unchanged in later youth and at 18 months - by  $2.1\pm 0.03$  cm ( $K=0.99$ ), at 36 months - by  $2.0\pm 0.05$  cm, At 60 months, it was observed to be equal to  $2.3\pm 0.06$  cm ( $K=1.15$ ;  $r<0.03$ ). It was found that the coefficient of growth of the absolute indicator of the thickness of the thyroid gland increases up to 2.05 times during the period from 3 months to 60 months of postnatal ontogeny of sheep.

The absolute index of the weight of the thyroid gland increases somewhat rapidly at 18 months of postnatal ontogeny of sheep, from 3 months to 6 months from  $1.0\pm 0.03$  to  $1.2\pm 0.07$  g ( $K=1.2$ ;  $p<0.02$ ). at 12 months - up to  $1.7\pm 0.05$  g ( $K=1.42$ ;  $r<0.03$ ), at 18 months - up to  $1.9\pm 0.05$  g ( $K=1.11$ ) and greater than at 18 months almost unchanged in the elderly, i.e. at 24 months - by  $1.92\pm 0.03$  g, at 36 months - by  $1.94\pm 0.02$  g, at 60 months - by  $1.98\pm 0.08$  g ( $K=1.02$ ) was observed to be equal. It was noted that the coefficient of growth of the absolute indicator of the thyroid gland

weight increased up to 1.98 times during the period from 3 months to 60 months of postnatal ontogeny of sheep.

### Summary:

- the absolute indicators of the linear dimensions and weight of the ring-shaped, thyroid-shaped glands of sheep have their own dynamics at different physiological stages of postnatal development, the most rapid growth coefficient was observed at the 18-month stage, and the highest indicator was observed at the 60-month stage;

- the thyroid gland, which forms the side wall of the larynx, is somewhat larger in terms of morphometric dimensions compared to its other glands, the absolute size of the gland width is higher than the height and thickness, and it was noted that it grows gradually from the studied 3 months to 60 months of postnatal ontogeny.

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