

MORPHOFUNCTIONAL CHARACTERISTICS OF TESTICULAR AND OVARIAN TISSUES OF ANIMALS IN THE AGE ASPECT

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Annotation:

The morphology of the organs of the male and female reproductive system and their histological parameters in small animals at different age levels were studied. Males and females of small animals of the following ages were selected for the experiment: 6 months, 12 months, 2 years and 4 years. The biological material of the testis and ovaries was taken from the animals for the manufacture of histological preparations. The preparations were stained with hematoxylin - eosin for morphometric analysis of organs.

Key words: *testis, ovary, age, function, morphology.*

Introduction

Recently, there has been an increasing debate about the correct age of pet castration. The operation itself is performed in connection with the desire to correct the behavior of a pet and prevent possible diseases associated with the animal's reproductive system, in this regard, in modern veterinary medicine there is such a thing as the age of castration, and different sources give very different data on this, in this study the goal is to find the optimal age of castration of small pets animals. [2]

MATERIALS AND METHODS

Sexual and physiological maturity of animals, one of the main factors influencing the age of castration of males, in the case of males and females, their puberty usually occurs at the age of 7-8 months and at the age of 6-8 months, respectively, from this moment their spermatozoa are ready for fertilization of the egg, and the eggs, in turn, are ready for fertilization by male spermatozoa. In cats and cats, puberty occurs at the age of 8-9 months and 5-6 months, respectively, so we can say that castration at an earlier age does not make any sense. But there is such a thing as physiological maturity, it occurs for males and females at the age of 12-15 months, and for cats and cats, regardless of the onset of puberty, it occurs at the age of 12-15 months. [4]

DISCUSSION.

In the period from August 2023 to March 2024, we selected and operated on 20 animals, 5 cats, 5 males, 5 cats and 5 bitches. 5 groups of animals were formed by age. Among males up to 6 months, from 6 months to 12 months and from 2 to 4 years, respectively. There were 4 animals in each group, 2 males and 2 cats. Among females up to 6 months old, from 6 months to 2 years old and from 2 to 4 years old. There were also 4 animals in each group.

The first group under study is animals up to 12 months old, due to the fact that these animals grow up to this time limit on average for the breed (judging by the literature data).

In the first group of animals, we did not find any morphological changes in the testicular tissue, and they corresponded to their age-related development, further images of histological sections under a microscope are presented.

The second group was chosen in this age range, because according to the literature, orchidectomy is a safe operation up to this age. A large number of morphological changes were found in this group. It is possible to see a correlation of changes depending on age in the youngest animals in this group there are morphological changes in testicular tissue, but it is impossible to say what caused these changes, age, or any injuries at a younger age. However, further unambiguous changes are already visible, due to the slowdown and absence of spermatogenesis in individual follicles. However, in general, good spermatogenesis is preserved in the testes. In the oldest animal from this group, it was possible to observe the progression of the presented morphological changes and the appearance of others. At the same time, normal spermatogenesis continued to be observed in animals, with possibly a slight decrease in sperm cell production.

RESULTS

Males and cats aged 2 to 4 years. This age group was chosen to consider the most striking and pronounced changes, usually animals go through orchidectomy by this age, but as practice shows, not always. Here you can see the most striking changes in testicular tissues, the most extensive growths of connective tissue, pronounced edema of follicles and connective tissue, absent or weakly expressed spermatogenesis. All these changes arise on the basis of the functional failure of the testicular tissue and the development of a resource as a result of aging of the body.

Cats and bitches under the age of 1 year

In this group of animals, we also found no morphological changes in the tissues of the uterus and ovary, and they corresponded to their age-related development. The uterus is developing its layers: the muscle layer is not fully developed, the mucous layer is represented by a thin layer of cells. Tissue cells are being formed, mostly connective tissue is visible.

Cats and bitches aged from 1 to 4 years

A large number of morphological changes were found in the presented group. It is possible to see a correlation of changes depending on age in the youngest animals in this group, there are morphological changes in tissues due to a slowdown in oogenesis in individual follicles. However, in general, good oogenesis is preserved in the ovaries.

In the oldest animal from this group, it was possible to observe the progression of the presented morphological changes and the appearance of others. At the same time, normal oogenesis continued to be observed in animals.

Cats and bitches aged 2 to 4 years

Here you can see the most striking changes in the tissues of the uterus and ovary, the most extensive growths of connective tissue and an increase in tissue volume. All these changes arise on the basis

of the functional failure of the tissue and the development of a resource as a result of aging of the body.

CONCLUSION

As expected, no changes were found in the first two groups, which is due to a young but mature organism, which in turn functions fully and effectively. In the two following groups, changes were found, but not all of them can be associated with age, something can be characterized as long-term consequences of injuries, some changes could occur as a result of impaired metabolic processes of the body, but there were also such changes that had a direct connection with the age of animals, such as a slight decrease in spermatogenesis both oogenesis and the absence of these processes in certain segments of organs, an active growth of connective tissue was noted in older animals in this group, and in one individual and its active collagenization, fatty degeneration and vacuolization of the seminal tubules were also detected, in the highest-aged male.

As expected, the most striking and pronounced changes in testicular tissues were noted in the last groups of animals. The first thing to note is a serious decrease in spermatogenesis and oogenesis, and in some cases their complete absence, which indicates the functional failure of organ tissue, multiple edemas, central, peripheral and diffuse, reflecting violations of osmotic pressure and water-electrolyte balance in cells, and possibly the whole organism as a whole, were also found. Extensive foci of connective tissue proliferation are present in all testes and ovaries, edema of interstitial connective tissue has also been found, which in turn can be called testicular edema, which can lead to serious pathologies such as colliquation necrosis and necrobiosis.

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