



THE AGE-RELATED CHARACTERISTICS OF SPERMATOGENESIS IN GANDER

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Introduction

Cryopreservation of testicular stem cells - spermatogonia is of interest along with the creation of semen cryobanks. During transplantation into recipients' testes, spermatogenic cells can create a significant population of germ cells in the process of differentiation. The knowledge about spermatogenesis course in males is necessary for the effective selection spermatogenic cells.

The research aim was to study the age-related characteristics of spermatogenesis in geese.

Material and methods

- ❖ The histostructure of gander testes (n=35) at the age of 1 to 7 months was studied.
- ❖ Sampled testes were immediately immersed in Bouin's fixative . After fixation samples were dehydrated with "Isoprep" in increasing concentration (50-100%) and were embedded in paraffin, sectioned by the rotary microtome at 5 µm. After slides samples were passed through the decreasing concentration (100-50%) of ethylic alcohol and in xylol. The histological slides were stained by Hematoxylin and Eosin stain (HE)
- ❖ The diameter of seminiferous tubules, and the types and number of spermatogenic cells in them were evaluated. The types of spermatogenic cells were identified by their morphology. From each gander at least 30 seminiferous tubules were examined.



1 day geese
(in incubator)

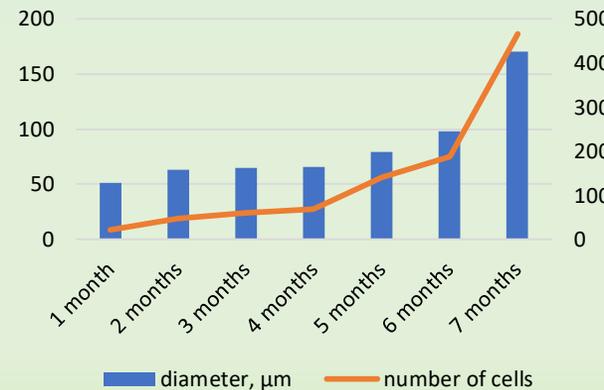


7 months
geese

Results

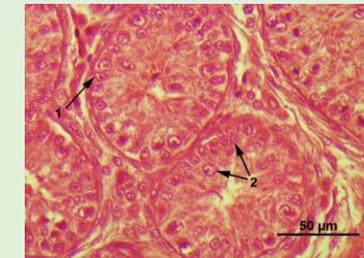
- At the age of 1 month, the diameter of the seminiferous tubules was 51±1 µm. In subsequent age periods, this indicator increased and amounted to 63±2, 65±3, 66±2, 79±3, 98±6 and 170±5 µm at the age of 2, 3, 4, 5, 6 and 7 months, respectively.
- Diameter increase with the age was associated with an increase of spermatogenic cells number inside tubules. At the 1 months age, the number of spermatogenic cells in one seminiferous tubule did not exceed 22±1. At the age of 2, 3, 4, 5, 6, and 7 months, this indicator increased by 2.1, 2.7, 3.1, 6.4, 8.5 and 21.2 times.

The relationship between the number of cells and the diameter of tubules



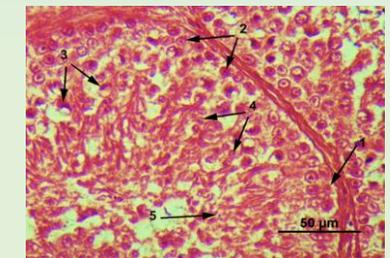
Cross section of gander seminiferous tubule

Age 1 month. Increase x40



- 1 - Sertoli cell,
- 2 - spermatogonia,

Age 6 months. Increase x40



- 3 - primary spermatocyte,
- 4 - secondary spermatocyte,
- 5 - spermatid

Conclusion: At the age from 1 to 3 months, the main cells types were Sertoli and spermatogonia cells. Primary and secondary spermatocytes from 4 months of age and spermatids from 5 months of age were visualized in the seminiferous tubules. Sperm were detected in the seminiferous tubules at 6 months old, the number of which increased towards the age of 7 months.

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