

INNERVATION OF UTERINE WALL IN ASPECT OF MUSCULAR LAYER CONTRACTION IN CAT'S REPRODUCTION CYCLE

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ABSTRACT

Female cats are seasonally polyestrous, which means they may have many periods of heat. The seas was beginning in January or February and ending in late October. The adult cat is seasonally polyestrous, cycling repeatedly throughout the breeding season, unless interrupted by pregnancy or illness. Several major phases compose the estrous cycle, and variations in the level of normal circulating hormones contribute to these different phases (proestrus, estrus, diestrus, anestrus, nonestrous). Prooesterus is the period that precedes estrus when males are attracted to nonreceptive females. Nonestrous is the period of hormonal inactivity. The innervation of uterine wall depends on the phase of the reproductive cycle. Cat's reproductive cycle is stimulated by the longer period of daylight as winter turns to spring and is regulated by hormones produced both in the brain and in the ovary. These hormones not only produce the changes in the reproductive organs needed for pregnancy but also cause some dramatic departures in cat's normal behavior. Hormones influence fertility and reproductive behavior in both the dog and the cat, although their heat and reproductive cycles vary depending on environment on sexual behavior.

In cats, mating behavior is required to induce ovulating. Domestic cats usually reach sexual maturity (puberty) between five to 12 months, at which time they experience their first estrus. The ovulation is the liberation of one or more ovules from the ovaries to the oviduct and the fecundating is the moment in which the spermatozoids join with the free ovules. It is fundamental to indicate that the female cat, in contrast with female dog, does not have a spontaneous ovulation. This ovulation is induced by the mating.

Key words: innervation, cat reproduction cycle

INTRODUCTION

The aim of this study was define to localization and distribution the elements of nervous system (ganglion, cells) in the uterine wall. In the fact of growing interest of cat's breeding it is impossible to avoid subject area relating physiology and cat's reproduction. The morphological modification in innervations of kitten uterus and it's dynamic changes are poorly understood. Modification in structure of reproduction organ are well-known however/but change relating innervations dependent on reproduction's phase is the subject of this study.

MATERIAL AND METHODS

The material was uterine horns taken from 11 cats in different stages of reproductive cycle.

The investigation of dynamics contraction in uterus realized by Videokstensometer (*Messphysik ME 46*) and contractile reaction on electric impulse were recorded by PC computer. It is a visual reading tension by numbered vision analysis .The mean property is: simplicity in use, accurate and non-contact during measurement investigation. After analysis in videokstensometer material was fixed and satined with osmium tetraoxide for the presence of nerve fibers in uterine horns

RESULT AND DISCUSSION

The investigations confirm necessity realization analysis which including uterus contraction and hormone's impact. In the first anoestral group, uterine horn has very regular, repeatability contraction. The second group, diestral uterus characterized an average in force contraction. Smooth muscle cells during pregnancy, undergo strong hypertrophy, what prepare the reproductive organ to the moment of parturition. The histological analysis of uterine horns in different stages of reproductive cycle confirm the fact, that number of nerves innervating uterine wall vary and have influence on muscle activity.

REFERENCES

- Christiansen I.: Reproduction in the Dog and Cat, Bailliere Tindall, London 1984, 248-251
- Drury R.: Histological technique, Oxford University, 1967
- Little S.: Rozród kotów, Weterynaria po Dyplomie 2002, 3, 10-17
- Scot J.: The action of glandular upon the contraction of the uterus, Philadelphia, 1908