TITLE: A quantitative cytological study of polyovular follicles in mammalian ovaries with particular reference to the domestic bitch (Canis familiaris).

AUTHOR(S): Telfer-E; Gosden-RG


PUBLICATION YEAR: 1987

LANGUAGE OF TEXT: English

ABSTRACT: The incidence of polyovular types in the growing follicle population was estimated using quantitative cytology. Of 15 species studied, polyovular follicles were recorded in the following species and in ascending order of abundance: rabbit, rhesus monkey, man, cat and dog. The incidence in bitches was 14% in animals aged 1-2 yr vs. 5 at 7-11 yr. The frequency of the various types of polyovular preantral follicle varied inversely with the number of oocytes per follicle, and the probability of finding a follicle with >5 oocytes was remote. In young ovaries the frequency was constant in the early stages of growth, but decreased in the largest preantral stage. The pattern in aging ovaries was, by contrast, one of declining frequency, such that few if any polyovular types completed development. The ovary of the aging bitch was also characterised by a higher incidence of degenerating follicles and a much smaller pool of primordial stages. Polyovular follicles were larger than uniovular types at similar stages, which were defined by the number of granulosa cell layers. Their oocytes were smaller but the overall ooplasmic mass was increased with a corresponding increase in the mass of granulosa cells.


Ovaries were collected from prepubertal (< 6 months of age, n = 4 ovaries), peripubertal (6 to 10 months of age, n = 12 ovaries) and mature (> 10 months, n = 12 ovaries) bitches after routine ovariohysterectomies and fixed in formalin. Ovaries were bisected, embedded in paraffin wax and 20 serial sections were made at intervals of 10 microns. Sections were stained with haematoxylin and eosin to examine follicles and oocytes in a cross-section of cortex of known size. Counts were made on all sections, resulting in examination of the entire cortical area present in the sections. Oocytes were counted and classified as nucleate or anucleate. Follicles were counted and classified as large (> 100 microns in diameter) or small (< 100 microns in diameter), containing one oocyte (monovular), more than one oocyte (polyovular) or no oocytes (anovular). It was concluded that at first oestrus there was an increase (P < 0.05) per section in number of total oocytes and small monovular follicles and a significant increase (P < 0.05) in the number of nucleated oocytes in monovular follicles, suggesting that oogenesis or folliculogenesis is still occurring at this age. At pre- and peripubertal ages polyovular follicles were found which persist into maturity. There was no difference in numbers of anovular follicles and total number of polyovular follicles among different age groups.
TITLE: Polyovular Graafian follicles in a newborn kitten, with a study of polyovuly in the cat.
AUTHOR(S): Shehata-R
ADDRESS OF AUTHOR: Anatomy Department, Faculty of Medicine, Cairo University, Cairo, Egypt.
PUBLICATION YEAR: 1974
LANGUAGE OF TEXT: English
ABSTRACT: The ovaries of 10 newborn kittens, 10 immature females and 5 adult females were examined. Polyovular Graafian follicles were found in the ovaries of 1 of the newborn kittens. This finding supports reports by previous workers that polyovuly occurs in the cat and that its occurrence tends to be restricted to young animals. The cause is thought to be an increase in FSH levels above normal.

TITLE: Histological and histochemical changes in bitch ovaries after PMSG with HCG and clomiphene citrate treatment.
AUTHOR(S): Prabhakar-S; Sharma-RD; Roy-KS
ADDRESS OF AUTHOR: College of Veterinary Science, Punjab Agricultural University, Ludhiana-141004, India.
PUBLICATION YEAR: 1989
LANGUAGE OF TEXT: English
ABSTRACT: Three anoestrous bitches were treated with PMSG + HCG (group I) intramuscularly and three orally with clomiphene citrate (Group II) for induction of oestrus. Serial sections of the ovaries in group I revealed the presence of mature follicles along with developing and developed corpora lutea, which signified induction of ovulatory oestrus. However, the required ovarian stimulus was not achieved following clomiphene citrate treatment. Polyovular follicles with 2-3 oocytes in the secondary stage of development were observed in group II. An identical histochemical picture was observed in all the experimental bitches.

TITLE: Studies on the gravid genitalia of goats.
AUTHOR(S): Nair-KP; Raja-CKSV
ADDRESS OF AUTHOR: Department of Obstetrics and Gynaecology, Kerala Veterinary College, Mannuthy, Trichur.
PUBLICATION YEAR: 1973
LANGUAGE OF TEXT: English
ABSTRACT: The reproductive tracts of 338 pregnant goats were studied. Embryo mortality occurred in 18% of animals, mainly in the first 40 days of gestation, and was significantly greater when > 2 ova were shed. Ovum migration, occurring in 37% of animals, was significantly more frequent for multiple ovulations. The incidence of single, twin, triplet and quadruplet pregnancies was 54.8, 39.8, 5.1 and 0.3% resp. Of the corpora lutea, 53.7% were found in the right ovary and 51.9% of foetuses in the right uterine horn. In 6 cases, the number of foetuses found was greater by 1 than that expected on the basis of the number of corpora lutea found in the ovaries. This was attributed to
the occurrence of monozygosity, polyovular follicles or polynuclear ova.

TITLE: Histomorphological and histochemical studies on the female genitalia of aging goat. I. Lipid histochemistry of ovary. III. Polyovular follicles and polynuclear ova in ovary.
AUTHOR(S): Joshi-CL; Nanda-BS; Saigal-RP
PUBLICATION YEAR: 1976
LANGUAGE OF TEXT: English
ABSTRACT: Paraffin sections of ovaries from 24 goats stained with acetone Sudan Black B for bound lipids and with copper-phthalocyanin for phospholipids revealed at least two categories of interstitial cells containing sudanophilic lipids with phospholipids. Cells in the first category were assumed to be formed from these interna cells of atretic follicles. The second category probably originated from the granulosa cells of primordial follicles and formed a continuous zone beneath the tunica albuginea. Another zone of interstitial gland cells, recognized beneath the latter, was presumed to have originated from the germinal epithelium. The appearance of sudanophilic material in relation to follicular atresia is reported. Polyovular follicles and polynuclear ova were recorded in five out of 24 goats aged 3 months to 5 years. These structures were recognized at proestrus, oestrus and metoestrus, but never in animals over one year of age. Polyovular and polynuclear follicles with no apparent degenerative changes were seen at oestrus, whereas degenerating ones were commonly seen at proestrus and metoestrus also.