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MORPHOLOGICAL STUDY ON THE CANINE OVARY

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(Summary of Master's thesis directed by Dr. T. ISHIKAWA)

Histological and histopathological studies of the canine ovary were carried out.

The materials were ovaries of 113 female dogs of various breeds, which were obtained at the Obihiro Health Center, and at the Veterinary Hospitals of Hokkaido University and of Obihiro Zootechnical University from 1954 to 1961. They ranged from 1 day postnatal to 15 years of age.

The results obtained may be summarized as follows:

1. In 66 cases difference between size of the right ovary and of the left was statistically insignificant ($p < 0.05$). In 52 cases no correlation was found between weight of the right ovary and of the left. However, there was a highly proportional correlation between total weight of the two ovaries and body weight ($p < 0.001$).

2. The primary, the secondary, and the Graafian follicles began to appear approximately at 15 days postnatal, 3 months, and 6~7 months, respectively.

3. The most characteristic feature of atretic secondary follicles of small or middle size was hyalinisation of the zona pellucida and of the theca folliculi. In the course of atresia of large secondary follicles and Graafian follicles, however, another type of atresia was also observed, additional to the hyalinisation type, in which proliferation of the theca interna was characteristic and finally follicular cavities of these follicles were replaced by connective tissue.

4. In one case "particular luteinization" was observed, which was differentiated from the usual atretic processes.

5. Polyovular follicles appeared frequently amongst the secondary follicles and the small Graafian follicles; the majority of them showed atretic characters.

6. Early development of the corpora lutea was characterized by fold-formation due to marked proliferation of granulosa cells. This seemed to occur before ovulation.

7. Regressive process of the corpora lutea graviditatis could be classified into three stages: in the first stage (up to about 2 months postpartum), connective tissues of the corpora lutea became abundant and light yellowish-brown pigments began to appear in luteal cells; in the second stage (up to about 5 months postpartum), the connective tissues developed markedly, so that the corpora lutea showed network appearance with very abundant pigments; in the third stage (later than about 6

months postpartum), the corpora lutea were separated into many groups of cells having dark brown pigments because of the well-developed blood vessels and connective tissues.

8. Difference between pregnant and non-pregnant corpora lutea could not be distinguished histologically.

9. Rete ovarii was observed in more than 75% of all cases, and in 10% of them there were rete cysts which developed from the rete ovarii.

10. One case of small cystic degeneration and one case of follicular cyst were observed. Another one case of small cystic degeneration was associated with follicular cyst. A histogenetic similarity was suggested between small cystic degeneration and rete cyst.

11. In one case cystadenoma of the ovary was diagnosed, in which the rete ovarii showed a histological appearance similar to that of the tumor.

12. In 2 senile cases of the age of 13 and 14, hyalinisation was observed in the tunica interna of the arteries in the ovary.