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CLINICAL SIGNS OF EXTENDED ESTROUS FOLLOWED BY PREGNANCY IN BITCH: A CASE REPORT

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ABSTRACT

In this report is presented the case of extended estrous accompanied by early embryonic development in bitch. The animal is 3 year's old Jack Russell terrier, with history of two successful pregnancies. On the day 8 and 9 after the beginning of a normal estrous, the bitch mate with a 7 years old male dog of the same breed. In the following two weeks after the copulation the clinical signs of estrous continued. The whole blood test was in norm and the echographic examination does not reveal any pathological changes of the uterus. Only the vaginal smear gives some consideration for local infection so treatment of the genital organs was prescribed. After treatment the clinical signs disappeared. Thirty five days after breeding, another ultrasound was performed and pregnancy with 5 fetuses was found. On the 64th day after copulation, five puppies were born alive. This report shows that even if bitch expressed clinical signs of extended estrous, a possibility of early pregnancy must be taken in consideration, especially when there is information for successful mating with male.

Key words: dog, estrus cycle, embryonic development

INTRODUCTION

Normally domestic dogs are multiparous animals with spontaneous ovulation and typically non-seasonal estrous cycle (Concannon, 2011). The estrous cycle is divided into several phases-proestrous, estrous and metestrous with overall duration of about 3 months, and inter-estrous phase called anestrous which vary in large borders between 5-12 months (Evans and Cole, 1931; Butinar et al., 2004). Estrous or "heat" is the phase when the ovulation occurs and the bitch is eager to accept the male dog and mate with him (Butinar et al., 2004; Kostov and Alexandrova, 2004). The duration of this phase is normally 5-15 days (Concannon, 2011) and sometimes reaches 3 weeks (21 days) (Butinar et al., 2004). It is accepted that prolonged estrous is related to continuously higher levels of estrogen (Meyers-Wallen, 2007; Risvanli et al., 2016). The reasons for increased estrogen production can be different - follicular cysts, ovarian tumors, development of a large number of tertiary follicles, hepatic disorders, some medications and etc (Risvanli et al., 2016).

CLINICAL CASE DESCRIPTION

The patient is female Jack Russell terrier, 3 year old, with two consecutive successful pregnancies (five healthy puppies born in each) and until that moment with normal duration of the estrous cycle. On the 8th and 9th day after the beginning of a normal estrous, the bitch mate with a

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7 years old male dog from the same breed. In the following 14 days after the copulation the signs of estrous like anxiety, brownish vaginal discharge and licking of the vulva continued. The animal weight was 6.3kg, body temperature 38.9ºC. The whole blood test was overall in norm, with just a small increase in hematocrit (Table 1).

Table 1. Results from whole blood test.

Parameters	Values	Reference Range
White blood cells ($x10^9$)	9.1	6.0-17.0
Lymphocytes ($x10^9$)	3.0	0.8-5.1
Monocytes ($x10^9$)	0.6	0.0-1.8
Granulocytes ($x10^9$)	5.5	4.0-12.6
Erythrocytes ($x10^{12}$)	7.52	5.5-8.5
Hemoglobin (g/l)	173	110-190
Plateletes ($x10^9$)	354	117-460
Hematocrit (%)	56.8 ↑	39.0-56.0

The vaginal smear consists of intermediate and superficial cells, a lot of bacteria, neutrophils and leukocytes. The echographic examination does not reveal pyometra or any pathological changes of the uterin wall. Vaginal flushing with potassium permanganate was prescribed. After 5 days of treatment the clinical signs disappeared and the animal began to express higher appetite and started to gain weight. Thirty five days after the initial mating, another ultrasound was performed and pregnancy with 5 fetuses was found. The pregnancy continued without any complications (Fig.1). Five puppies (3 females and 2 males) were born alive and healthy at the 64th day after copulation (Fig.2)

Fig.1. Jack Russell terrier pregnancy day 52

Fig.2 The result of the pregnancy - five healthy Jack Russell terrier puppies.

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DISCUSSION

The patient was in good overall condition, without detectable signs of pathological processes. The only concern was the present of large number of bacteria in vaginal smear which was the reason for the prescribed treatment. The type of cells in vaginal smear has patterns typical to end of estrous (Sharma and Sharma, 2016) but possibility of early gestation still existed, especially having in mind that the bitch mated with male 14 days ago. It was decided that if the animal begin to show signs of pregnancy like improved appetite or weight gain in the following weeks after treatment, another transabdominal ultrasonography to be performed. When the animal begins to exhibit the aforementioned signs, another ultrasound examination was performed and the pregnancy was confirmed at day 35 after copulation. The number of fetuses and approximate date of parturition were predicted too. It is accepted that between day 30 and 39 of gestation is the best period to make more accurate parturition date prediction (Kim et al., 2007). Eventually, the case was concluded with parturition of healthy puppies, 64 days after mating, which is the normal duration of gestation in dogs (Concannon et al.,1989).

Some authors described prolonged estrous as estrous phase longer than 21 days, accompanied by continuous clinical sign of heat (desire for mating, vulvar edema, hyperemia of vaginal mucosa and etc.) and in absence of ovulation (Risvanli et al., 2016). However, the clinical report presented here suggested that if we have a case of a bitch with extended estrous along with information for successful mating with male there is a possibility that ovulation actually happened and resulted in early pregnancy.

COMPETING INTERESTS

The authors declare that there is no conflict of interests regarding the publication of this paper.

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