

Trans-Vaginal Insemination in a She Dog

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Abstract

In present study, a she dog was reported with history of bloody discharge from vagina since last eight days and previous complaint of failure to natural service due to severe aggression of female dog towards male dog. Exfoliative vaginal cytology was performed and revealed 90 percent cornification index. Considering history of she dog, trans-vaginal artificial insemination was performed and pregnancy diagnosis was undertaken on 35th day post artificial insemination. An approximate litter size of 7-8 was confirmed by ultrasound examination. On completion of gestational period, the said she dog successfully delivered nine healthy puppies.

Keywords: Cornification; exfoliative; gestational period; trans-vaginal; ultrasound

Introduction

Artificial insemination (AI) is the process by which spermatozoa are placed into reproductive tract of female for impregnation using means other than natural mating (Farstad, 2010). A successful natural mating requires full intromission of dog's penis into the vagina, with the bulb of penis being locked into vagina for a minimum of 10 minutes in order to achieve a successful breeding (Mason, 2018). In area of dog breeding, artificial insemination reduces risk of disease transmission as well as it is useful when natural mating is difficult either due to age, debility, behavior, back pain, premature ejaculation and lack of libido (Gulawane *et al.*, 2004). It also helps to preserve the genetic potential of stud dog for future use, in event of disease, death and unexpected sterility or sale of the dog. Along with these, major benefit of artificial insemination is its precision; where semen quantity and quality is known as compared to natural service (Sridevi, 2015).

History and Clinical Observation

A four year old Golden Retriever she dog weighing 36 kg was presented with history of bloody discharge from the vagina since last 8 days. Chief complaint of previous mating with unsuccessful outcome was major problem.

Diagnosis

Exfoliative vaginal cytology on the same day was

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carried out to know the stage of estrus. Vaginal smear was collected by cotton swab method and stained with Leishman's stain and was observed under low power magnification under microscope. Similarly, semen evaluation was performed after collection of semen by digital manipulation. Various macroscopic (volume, color, pH) and microscopic (sperm motility, live dead sperm count) examination was carried out.

Results and Clinical Procedure

The vaginal cells were showing 90 percent cornification index. Animal was confirmed to be in early stage of estrus and owner was advised to visit along with the stud after 48 hours. Following parameters were observed: Semen volume (12 ml), consistency (cloudy), color (white to opalescent), motility (70 percent progressive forward motility) and live sperm count (80 percent).

As the female dog was very aggressive with the male dog during mating and not allowing proper tying up. Therefore, decision to inseminate her artificially was undertaken. Semen was collected from the stud using digital massage technique under aseptic conditions. She dog was elevated from rear end at 45° to 60° angle and freshly collected semen was deposited intra-vaginally by using AI sheath used for large ruminants. The same position was maintained for about 10 minutes to prevent backflow of semen in vagina. Second AI was performed with an interval of a day by adopting standard operating procedures of vaginal cytology, semen collection and



Fig. 1: Semen collection



Fig. 2: Trans-vaginal semen deposition

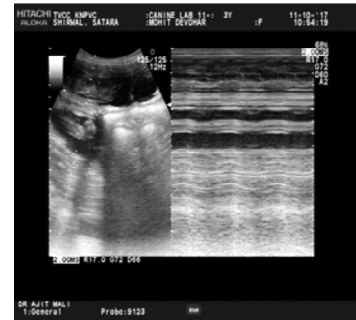


Fig. 3: Fetal heartbeats by B-M mode



Fig. 4: Fetal measurement – CRL, BD and BPD

evaluation. Pregnancy diagnosis was performed on day 35th post AI by using trans-abdominal ultrasonography with multi-frequency sector probe having frequency of 3 to 5 MHz. She dog was confirmed pregnant by observing gestational sacs with proper fetuses inside. Average Gestational Sac Diameter, Biparietal diameter and Crown Rump length were measured 6.2 cm, 1.5 cm and 5.7 cm respectively. Foetal heartbeats of puppies in gravid uterus were observed and measured by using B mode, M mode and Doppler mode which were in the range of 210 -220 beats/minute. Foetal viability of all puppies were confirmed on basis of foetal heart beats and foetal movements. On ultrasound examination, an approximate litter size was estimated to be 7-8. Nine healthy puppies were delivered on completion of gestational period.

Discussion

The decision of artificial insemination becomes an important part while considering wider applications in area of dog breeding. AI in canines is an excellent and useful tool when use appropriately which helps to upgrade the overall quality of canine breeds allowing a wider range of potential breeding partners. In cases of vicious behavior AI plays a pivotal role in eliminating such undesirable traits. (Sridevi, 2015). This technique in future may help to achieve the level seen in assisted reproductive technique in cattle and a good area of research in canine reproduction. (Durrant, 2009).

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