

Study on Aerobic Bacterial flora in Canine abortions

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Abstract

Of the 125 bitches with reproductive disorder, 10 bitches which were aborted at different stages of gestation and presented to Veterinary hospitals for treatments were included in the present study. Total thirteen isolates were recovered from the aborted samples. The frequency of bacterial isolates in descending order were *Escherichia coli* (38.46%), *Streptococcus canis* (38.46%), *Staphylococcus epidermidis* (15.38%) and *Staphylococcus aureus* (7.69%).

Keywords: Aerobic Bacteria, Canine, Abortion, Reproductive disorder,

Introduction

Infertility of infectious etiology can pose a serious problem in the breeding and management of female dogs. These infections are of interest for economic and public health reasons and such infections may create serious problems for the commercial litter producer, since several of the diseases are chronic and affect litter health.

There is wide spread belief among breeders and veterinarians that diseases such as vaginitis, pyometra, abortion or still birth may be caused by specific micro-organisms. However, the knowledge of the relationship between presence of bacteria in reproductive tract and abortion in bitch is still confusing. During recent years, reproductive failures among female dogs have been reported more frequently by dog breeders and pet owners.

The present study was conducted to find out the association of aerobic bacterial flora in canine abortion.

Materials and Methods

Bitches with history of abortion presented to the Veterinary College hospital, in and around Bangalore were selected for the study. Out of 125 bitches with reproductive disorder, 10 bitches which aborted at different stages of gestation and presented to hospitals for therapy were included for this study.

Abdomen of the aborted fetus was cut open with aseptic precautions using sterile forceps and scissors. The stomach contents were removed by searing an area of stomach wall with a heated spatula, plunging the tip of a Pasteur pipette through the seared area and stomach contents were transferred to a sterile test tube (Alton et al, 1975).

In case of non availability of aborted fetus, post

abortion vaginal discharge was collected using a sterile vaginal speculum and sterile cotton swab and bacterial isolates were obtained and identifications were done based on their morphological, cultural and biochemical characters as per the standard procedures (Krieg et al. 1984).

Results and Discussion

The bacterial species were identified following the standard methods described by Cruickshank et al. (1975) and Mackie and Macartney (1989). A total of 37 isolates were obtained from 25 cases of metritis consisting of *E.coli* and *Streptococcus canis* were recovered from five samples, while four samples yielded mixed cultures containing *Streptococcus canis*, *Staphylococcus epidermidis*, *Staphylococcus aureus* and *E.coli* in two varieties and one sample failed to yield any growth. The frequency of different bacterial isolates in the descending order were *E.coli* (38.46%), *Streptococcus canis* (38.46%), *Staphylococcus epidermidis* (15.38%) and *Staphylococcus aureus* (7.69%) (Table 1).

Out of five isolates of *E.coli*, three were recovered as pure cultures, while two were obtained in mixed cultures along with *Streptococcus canis* and *Staphylococcus aureus*. Similarly Gandotra et al. (1992) reported isolation of *E.coli* from vaginal swabs of bitches, which had history of abortion.

It is well documented that, endotoxins from Gram negative bacteria may cause genital hemorrhage and abortion in many animal species (Weingold et al. 1966). Linde (1983), who observed abortion associated with genital *E. coli* infection in five and a half weeks pregnant bitch with a history of genital hemorrhage and claimed that, endotoxin induced decidual hemorrhage by *E. coli*

Table-1. Bacterial isolates recovered from bitches with abortion

Bacterial species	No. of isolates	Percentage
<i>E. coli</i>	05	38.46
<i>Staphylococcus aureus</i>	01	07.69
<i>Staphylococcus epidermidis</i>	02	15.38
<i>Streptococcus canis</i>	05	38.46
Total	13	

had probably caused a total placental separation and subsequent expulsion of the fetus. Bjurström, (1993) found *E. coli* as the major isolate (41.7%) recovered from bitches which had delivered dead puppies. Suter, (1977) noticed that, bacterial infection was the cause of death in 22.2% of autopsied pups and observed *E. coli* as the major isolate.

Five isolates of *Streptococcus canis*, two isolates in pure culture and three isolates along with *E. coli* and *Staphylococcus aureus*, as mixed cultures, were recovered from bitches with a history of abortion. Similarly Gandotra et al. (1992) reported isolation of beta haemolytic streptococci from vaginal swabs of aborted bitches and Olson, (1975) recovered *Streptococcus canis* from the uterus of five year old infertile bitch. Beta haemolytic streptococci isolated from canine vaginal discharge have been incriminated in abortions (Mantovani et al. 1961) and neonatal septicemia (Stafseth et al. 1937; Mantovani et al. 1961). It is already well established that *streptococci* have been associated with various pathogenic conditions in other species of domestic animals, although little information is available with regard to incidence, nature and effects of *Streptococcus canis* in dogs. However, a few investigators (Fry and Tom Hare, 1938; Stableforth, 1938) have reported isolation of beta haemolytic streptococci from genital tract of bitches in breeding kennels, which were showing various clinical manifestations like abortion, failure to conceive, uterine inertia and death of young puppies, and these workers suspected the role of *streptococcal* toxin in puppy death, which might have been absorbed by puppies in the uterus itself. Some investigators (Stafseth et al. 1937; Tom Hare and Fry, 1938; and Mantovani et al. 1961) have well documented by isolating Group-G beta haemolytic *streptococci* from bitches, which were potentially pathogenic in causing abortion and neonatal septicemia.

Two isolates of *Staphylococcus epidermidis* and

one isolate of *Staphylococcus aureus* were recovered in mixed cultures along with *E. coli* and *Streptococcus canis*, which agrees with similar findings of Gandotra et al. (1992). The exact role of these organisms in inducing abortion in bitches is not clear.

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