CLINICAL AND ULTRASONOGRAPHIC EVALUATION OF BITCHES AFFECTED WITH PYOMETRA

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ABSTRACT

Among the common major reproductive disorders in bitches, canine pyometra is a major one. Total nine bitches having gynaeco-clinical signs suspected of pyometra were evaluated by abdominal palpation and ultrasonography using 2.5-7.5 MHz sector probe through ventral midline approach. Ultrasonographic images of anechoic to hypoechoic fluid filled uterus with thick uterine wall confirmed all the nine bitches to be pyometric. The general condition of bitches with closed pyometra was poor, whereas it was fair in cases of open pyometra. The distension of abdomen was apparent in 33.33% cases and on palpation also the uterus was found distended. Inappetance, fever and vomition was observed in 88.89, 77.78 and 55.56 % of pyometric bitches, while toxaemia, polyuria and polydipsia were present in 77.78, 66.67 and 77.78 % of bitches, respectively. Vaginal discharge sticking to the hair of tail and perineum was present in all 6 cases of open pyometra and it's colour varied from gray to chocolate with foul odour. Abdominal palpation was clear in 3 cases and unclear in 6 cases. It is thus concluded that ultrasonography is an effective diagnostic tool for the qualitative and quantitative evaluation and diagnosis of canine pyometra.

KEY WORDS: Bitch, Clinical signs, Diagnosis, Pyometra, Ultrasonography.

INTRODUCTION

Pyometra (chronic purulent endometritis) is a common, metoestral disease mainly affecting middle-aged and older bitches (Egenvall *et al.,* 2001). Clinical symptoms are well described and are derived from the site of infection with more of systemic effects (Hardy and Osborne, 1974). Bitches with pyometra may present either with or without a vaginal discharge (open- or closed-cervix pyometra). Closed-cervix pyometra is difficult to diagnose in early stages, until gynaeco-clinical symptoms are shown by the bitch which make the case a medical emergency that requires rapid intervention to prevent overwhelming sepsis and the potential of patient death (Smith, 2006). Ultrasound is particularly valuable for detecting the uterus that is filled with fluid or fetus. In cases where there are large volumes of uterine fluid, there is usually a far enhancement effect (Arthur *et al.,* 2001). Baithalu *et al.* (2010) reported that the diagnosis of pyometra is best made with the aid of ultrasonography. This communication therefore reports on clinical and ultrasonographic evaluation of uterus of bitches suffering from pyometra.

MATERIALS AND METHODS

The study was performed on 9 bitches presented with clinical signs suspected of pyometra at the TVCC and/or Department of Surgery & Radiology, College of Veterinary Science and Animal Husbandry, Anand. The present complaints, details of breeding/oestrus cycle and clinical signs as well as findings of abdominal palpation of each bitch were recorded. The uterus of bitch was then scanned for pyometra using ultrasonography machine, "*e-saote* My Lab Five VET" (Netherland) with a sector probe (2.5-7.5 MHz) placed on mid ventral abdomen. For abdominal palpation and USG, bitches were restrained and placed in lateral and/or dorsal recumbancy. Shaving was done in large hairy bitches. Findings of abdominal palpation, uterine distension, nonpregnancy and clinical

signs were correlated for the final conclusive diagnosis of pyometra and the severity of the condition.

RESULTS AND DISCUSSION

Clinical signs:

The age of 9 bitches investigated ranged from 2 to 13 years. Eight bitches were pure bred and 1 was cross, 77.78 % of them were nulliparous. None of the bitches had received exogenous hormone therapy. Pyometric bitches when presented to the clinic were dull, depressed and lethargic. The general condition of bitches with closed pyometra was poor, whereas it was fair in cases of open pyometra. Vaginal discharge sticking to the hair of tail and perineum was present in all the 6 cases of open pyometra (66.67 %), but was absent in 3 cases of closed pyometra (33.33 %). The colour of vaginal discharge varied from gray to chocolate with foul odour in some of the cases. The distension of abdomen was apparent in 3 cases (33.33 %) and on palpation, uterus was also found distended. However, only in one case (11.11 %) feed intake was normal and rest 8 (88.89 %) bitches were anorectic. The mean rectal temperature of bitches with pyometra was 102.24 ± 0.50°F and it ranged between 98.8° and 103.6°F. Fever and lethargy/toxaemia was recorded in 7 (77.78 %) pyometric bitches each. Vomition was observed in 5 (55.56 %) pyometric bitches and diarrhoea in 2 cases (22.22 %), Polyuria and polydipsia was observed in 66.67 (6 cases) and 77.78 (7 cases) % of pyometric bitches.

In brief, the clinical manifestations exhibited by majority of pyometric bitches coincided with the earlier reports (Nomura *et al*., 1984; Haque and Ahmed, 2003; Dabhi *et al.,* 2008; Hagman *et al.,* 2011), but the observations of Feldman and Nelson (1996) showed relatively lower intensity of these signs. Present findings also closely corroborated with the observations of Roberts (1971) and Hagman (2004), who stated that in acute cases, rectal temperature rises while in chronic cases it is either normal or subnormal. This rise in temperature could be due to septicaemia, and subnormal temperature might be due to chronic inflammation and toxaemia that was evident in some cases. The greater severity of clinical signs observed in most bitches was probably due to delayed reporting for the treatment.

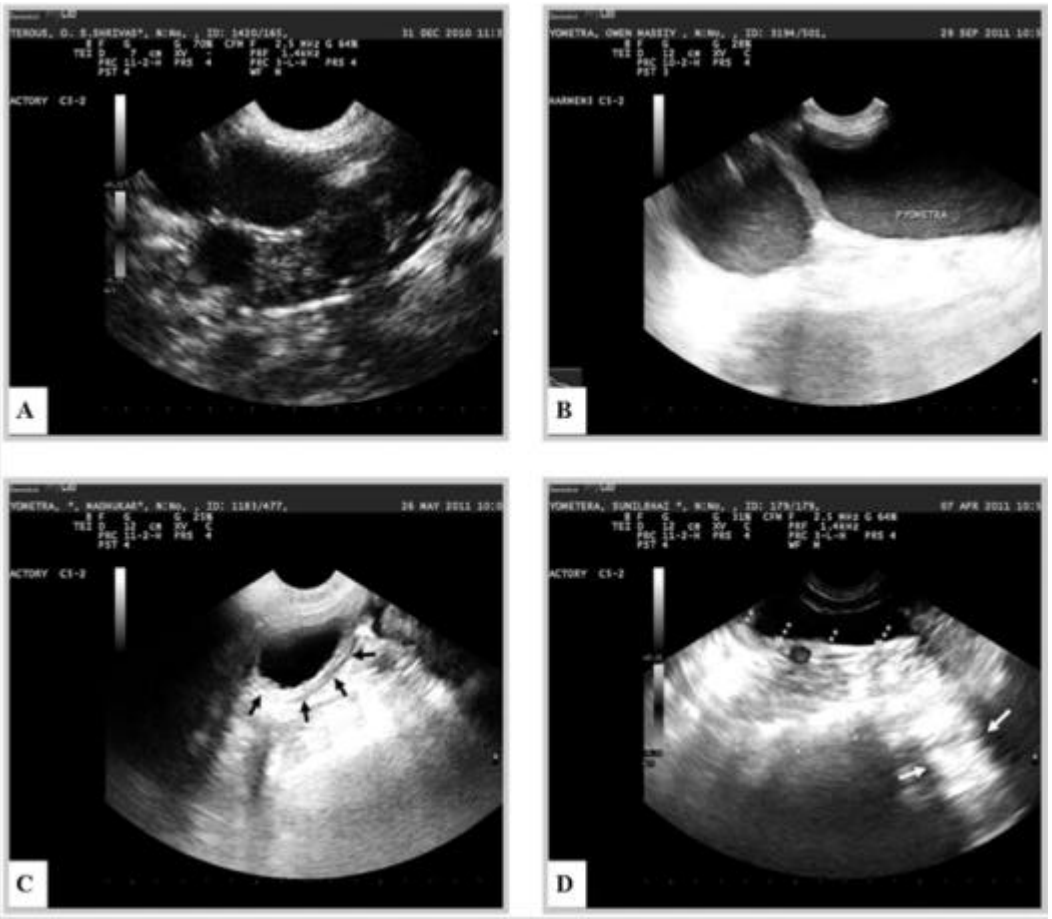
Abdominal Palpation:

In the present study, abdominal palpation was clear in 3 (33.33 %) cases and unclear in 6 (66.67 %) cases. Three (33.33 %) bitches suffering from disease were found to have enlarged uterus, while 6 (66.67 %) bitches could not be diagnosed by abdominal palpation. Jones and Joshua (1988) also reported similar limitations in clinical diagnosis of uterine distention. Feldman and Nelson (1996) stated that the pyometric uterus may be difficult to palpate, especially if it is draining much of its contents or if it is enlarged but flaccid. Maiti *et al*. (2000) and Rajesh *et al*. (2002), however, reported gross abdominal distension in cases of pyometra. Dabhi and Dhami (2007) examined 14 pyometra cases in bitches and reported that abdominal palpation was clear in 5 (35.71 %) cases and unclear in 9 (64.29 %) cases. Uterine distension was not so marked in cases under present study.

USG Findings:

The findings of ultrasonographic evaluation of uterii of bitches clinically suspected of having pyometra were clear and confirmatory in all 9 (100 %) cases. Ultrasonographic picture revealed the echogenic fluid and hypoechoic tubular uterus with enhancement effect due to large quantity of uterine fluid. In some cases images showed hypoechoic enlarged uterus folded upon itself so that the sections of both horns were visualized in a single plane, and thick echogenic uterine wall due to increased thickness (Fig. 1). The ovariohysterectomy performed in bitches affected with pyometra, confirmed the ultrasonographic findings. These findings closely corroborated with the reports of several previous authors (Arthur *et al.,* 2001; Bigliardi *et al.,* 2004; Pretzer, 2008; and Baithalu *et al.,* 2010). The ultrasonographic examination performed accurately diagnosed the

Fig. 1: Ultrasonographic images of uterus of bitches affected with pyometra



A. Hypoechoic enlarged uterus folded upon itself, sections of both horns are visualized in a single plane (Colour Doppler showing high vascularity). B. Enlarged uterus with sacculations filled with anechoic to hypoechoic fluid. C. Echogenic uterine wall increased in thickness (arrows) with anechoic to echogenic particles as luminal contents. D. Echogenic fluid and hypoechoic tubular structure (dotted arrows) with enhancement effect (solid arrows).

condition in all the pyometra cases. Zoldag *et al.* (1992) and Baithalu *et al.* (2010) opined that ultrasonography is an accurate procedure for the qualitative and quantitative examination and diagnosis of canine pyometra.

It was thus concluded that the ultrasonography is a rapid, safe and an accurate diagnostic aid for the qualitative and quantitative evaluation of canine pyometra.

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