

STUDY ON THE FACTORS AFFECTING OCCURRENCE OF PYOMETRA IN REPORTED CANINE CLINICAL CASES OF UDAIPUR REGION

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SUMMARY

The current study was carried out for observing the occurrence of the disease and its signalment based on history taking followed by thorough clinical examinations on 16 pyometric she dogs referred to Veterinary Polyclinic, Udaipur. The mean age of occurrence of pyometra was 8.2 year and was recorded highest in Labrador breed of dog. The most commonly noticed clinical signs in she dogs were vaginal discharge and anorexia, followed by polydipsia, vomiting lethargy and enlarged abdomen. The least common encountered clinical sign was polyurea.

Keywords: Age, Pyometra, She dog, Vaginal discharge

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Pyometra or chronic purulent endometritis as an accumulation of pus in the uterus is a common illness in adult intact female dogs (Hagman, 2018). It is a common menstrual disease mainly affecting she dogs between 9 months and 18 years old age with a median age of 10 years (Jitpean *et al.*, 2012). The estrogen therapy used to prevent implantation also contributes in development of pyometra through over proliferation of endometrium and lengthening the period in which the uterine cervix remains open. The use of progestogens for oestrus and ovulation synchronization in she dogs can also be a cause of pyometra (Singh *et al.*, 2019). The disease normally develops following estrus, during the luteal phase (Blendinger *et al.*, 1997). The clinical signs noticed by pet owners are vaginal discharge, depression, polyurea, polydipsia, abdominal distension, vomition and anaemia (Liao *et al.*, 2020). The objective of this study was to evaluate occurrence of the pyometra and its signalment on the basis of history taken accompanied by thorough clinical evaluations.

The study was carried out in sixteen clinical cases of canine pyometra presented to the Veterinary Polyclinic, Udaipur with tentative diagnosis based on collection of information from owner regarding history (age, breed, parity, date of last estrus and whelping) and clinical signs (anorexia, polyurea, polydipsia, vomition and diarrhoea, vaginal discharge and its nature). Gynaeco-clinical examination comprised of recording of rectal temperature, pulse and respiratory rate, presence and absence of vulval edema and vaginal discharge.

Following factors were associated with pyometra:

Age: The mean age of occurrence of pyometra was

8.2±0.56 year and range of affected she dogs was 4.5 years to 13 years. It was closely correlated with Dabhi (2005) who reported mean age of occurrence of pyometra as 8.36±0.82 years. The occurrence of pyometra is more between middle age to older age (Table 1, Fig.1). It may be due to more exposure of endometrium to progesterone with the increased number of estrous cycles (Gilbert, 1992).

Breed: In the present study, out of 16 cases of pyometra, the highest occurrence of 43.75 percent was observed in Labrador (7 cases), followed by Pomeranian (18.75 percent/ 3 cases) and others breeds, viz., Pug, Golden Retriever, German Shepherd and Pitt bull, Dalmatian (6.25 percent/ 1 case each) (Table 1). Bhat *et al.* (2018) also reported more incidence of pyometra in Labrador (33.33 percent).

Parity: In present study, the occurrence of pyometra was higher in nulliparous (87.5 percent/14 cases) followed by primiparous (6.25 percent/4 cases) and multiparous she dogs (6.25 percent/1 case) (Table 1). Gupta *et al.* (2020) also observed that the nulliparous she dogs have higher risk of pyometra.

Nature of estrous Cycle: Out of 16 pyometric cases, 62.5 (10 cases) and 37.5 (6 cases) percent had irregular and regular estrous cycle, respectively (Table 1). Similarly, the average interval between last estrus and diagnosis of pyometra was recorded to be 8.63 weeks with a range varying from 4 weeks to 14 weeks as previously observed by Bhat *et al.* (2018).

Gynaeco-Clinical Signs: The vaginal discharge and anorexia was seen in 81.25 percent (13 cases) of she dogs followed by polydipsia (50 percent/8 cases), vomition (50 percent/8 cases), dull and depressed/ lethargy (43.75 percent /7 cases), enlarged abdomen (43.75 percent/7 cases), polyurea (18.75 percent /3 cases) (Fig. 2). During this study, vaginal

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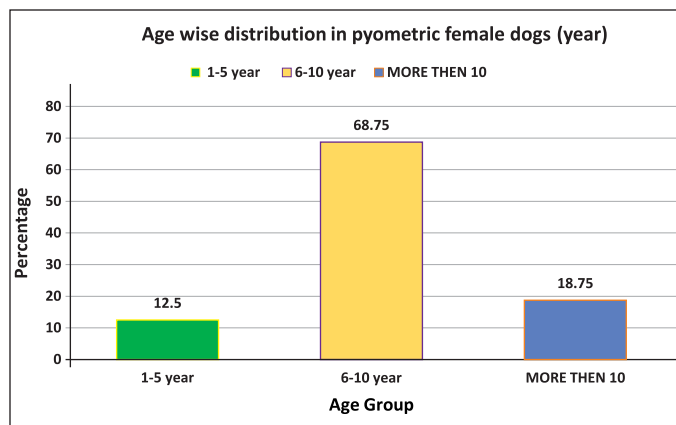


Fig. 1. Age-wise distribution of pyometric female dogs under study

discharge was observed in all 13 cases (81.25 percent) of open pyometra but it was not observed in closed pyometra cases (18.75 percent). Similar occurrence of open and closed pyometra were observed by Jitpean *et al.* (2017), polydipsia as observed by Contri *et al.* (2015) and vomiting as observed by Liao *et al.* (2020).

The occurrence of enlarged abdomen in our study was 43.75 percent which is correlated with Renukaradhya (2011). Liao *et al.* (2020) reported polyurea in 23.6 percent pyometric she dogs which is similar with the present findings of 18.75 percent. The clinical signs presented by affected she dogs may be due to secondary renal damage, which leads to development of polyurea and polydipsia (Verstegen *et al.* 2008). Pyometra causing glomerulopathy and tubular injury has been reported in literature in all age

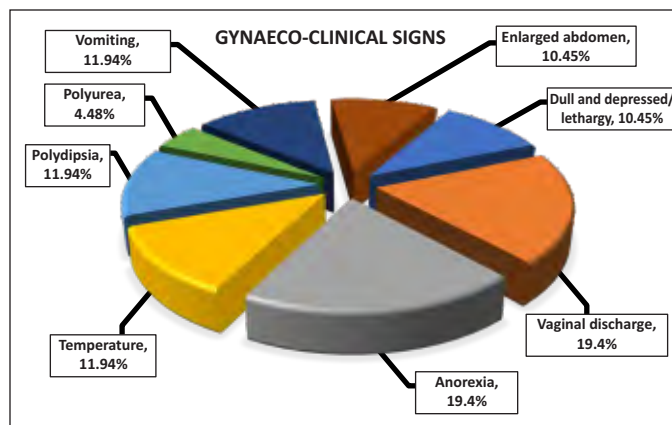


Fig. 2. Gynaeco-clinical signs observed in cases of pyometra

groups. It is manifested by decreased renal perfusion, immunomediated glomerulonephritis, low ability for urinary concentration, interstitial tubular disease and decrease glomerulo filtration rate. Late diagnosis causes irreversible damage to kidney.

In the present study, the higher number of cases were of open pyometra as compared to close pyometra which explains the less severe clinical signs as in open pyometra cases, evacuation of pus or uterine content through open cervix takes place. It could also be assumed based on the above facts that the difference in the current occurrence of pyometra in various breeds may be due to popularity of a specific breed in different geographical location rather than any breed predisposition (Renukaradhya, 2011).

Physical and clinical examination: Examination of the

Table 1

Breed, age, body weight, parity, nature of estrous cycle and date of last estrus/mating of pyometric female dogs under study

Animal No.	Breed	Age (Year)	Body wt. (kg)	No. of whelping	Nature of estrous cycle	Last estrus/mating (before)
1.	Labrador	9.0	24.0	1	Regular	12 weeks
2.	Pug	7.0	8.0	0	Regular	6 weeks
3.	Dalmatian	7.0	22.0	0	Irregular	4 weeks
4.	Pomeranian	13.0	15.0	2	Irregular	10 weeks
5.	Pitbull	10.0	21.0	0	Irregular	7 weeks
6.	Labrador	7.0	35.0	0	Regular	6 weeks
7.	Pug	8.0	7.5	0	Irregular	11 weeks
8.	Labrador	8.0	29.0	0	Irregular	16 weeks
9.	Golden Retriever	9.0	26.0	0	Irregular	16 weeks
10.	Labrador	11.0	45.0	0	Irregular	11 weeks
11.	German Shepherd	7.5	23.0	0	Irregular	18 weeks
12.	Pomeranian	9.0	11.5	0	Irregular	9 weeks
13.	Labrador	5.0	23.0	0	Regular	5 weeks
14.	Pomeranian	10.5	14.0	1	Regular	10 weeks
15.	Labrador	4.5	28.0	0	Irregular	15 weeks
16.	Labrador	6.0	53.0	0	Regular	4 weeks
	Mean ± SE	8.2± 0.56	24.1± 3.12			

vulva revealed an oedematous appearance in 62.5 percent (10 cases) of the animals, normal appearance in 31.4 percent (4 cases) of the animals and a wrinkled appearance in 5.7 percent (2 cases) of the animals. The prevalence of vulval oedema was noticed by Chithra (2013). Renukaradhya (2011) explained that due to constant licking of vulva in open cervix pyometra leads to oedematous appearance, however its presence in closed pyometra is difficult to explain. The vaginal discharge on aspiration was purulent in 53.85 percent (7 cases), haemorrhagic in 30.77 percent (4 cases), and serosanguinous in 15.38 percent (2 cases). The present finding is correlated with Hagman *et al.* (2006).

The mean temperature in the affected group was 102.31±0.18 °F and it ranged between 101.4 °F and 103.4 °F. Fever was recorded in 8 (50 percent) pyometric she dogs. These present finding corroborated with Hagman (2004). Hagman (2004) suggested that rectal temperature increases in acute cases, whereas it is either normal or subnormal in chronic cases. This increase in temperature may be attributed to septicaemia, and subnormal temperature may be due to chronic inflammation and toxemia.

The mean pulse rate in the affected group was 73.94±0.84 per minute and the mean respiratory rate was 23.81±0.77 per minute and both were found to be well within the normal physiological ranges of 70-80 per minute and 20-30 per minute, respectively. This present findings are in closely agreement with Chithra (2013).

CONCLUSION

The occurrence of pyometra was found higher in middle aged she dogs particularly between 6-10 year (mean 8.2±0.56 year) and more in nulliparous she dogs (87.5%). The highest occurrence of vaginal discharge and anorexia was seen in 81.25 percent (13 cases) of she dogs.

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