E-ISSN: 2320-7078

P-ISSN: 2349-6800

www.entomoljournal.com

JEZS 2021; 9(2): 166-169

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Received: 12-12-2020

Accepted: 10-02-2021

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A retrospective study of incidence of canine reproductive cases in Udaipur district

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DOI: <https://doi.org/10.22271/j.ento.2021.v9.i2c.8474>

Abstract

The purposes of this Study (retrospective) were to determine the incidence of gynaecological cases in Udaipur region of Rajasthan. Total 387 gynaecological cases were attended in bitches during the 2018-2020. Out of 387 gynaecological cases, the highest incidence was of pyometra (18.86 percent), followed in descending order by elective sterilization (16.28 percent), caesarean section (13.95 percent), pregnancy diagnosis (13.18 percent), pseudo-pregnancy (4.91 percent), mammary tumours (4.65 percent), mismating (4.65 percent), anoestrous (4.39 percent), dystocia (4.14 percent) and canine transmissible venereal tumors (3.36 percent) and other miscellaneous (11.63 percent). Maximum cases were in the young 0- 5 years old bitches (44.5 percent), followed by middle age group of 6-10 years (36 percent) and the lowest in older bitches of 11-15 years of age (19.5 percent). It was concluded that significance of life-threatening diseases (pyometra) of bitch in urban area of Udaipur.

Keywords: retrospective, bitch, pyometra, incidence

Introduction

Dog (*Canis lupus familiaris*) is the most preferred domestic mammal of the family Canidae and order carnivora, (which evolved from the miacids, the ancestor of today's canids) by the humans to be kept as a pet. Dogs were probably the first tame animals Dogs acted as herders and protectors of sheep, goats and cattle until cattle first domesticated around 7,000 to 9,000 years ago. As per the 20th livestock census 2019-20, the total dog population (rural and urban) in India amounts to 94,34,039 (70,58,379 male and 23,75,660 female); whereas Rajasthan has a total of 2,73,387 (2,12,427 male and 60,960 females) ^[1]. Therefore, canine breeding has become a profitable and lucrative venture. However, gynaeco-pathological problems and reproductive disorders play a big role in canine infertility. In female infertility can manifest as failure to cycles, an aberration of the estrous cycle, an aberration of the oestrus period, failure to conceive, prenatal death which can be due to abortion, embryonic death, embryonic resorption or fetal death, perinatal death which can be due to stillbirth or neonatal mortality ^[2]. Female infertility may be caused by many etiological agents.

Incidence of various reproductive cases such as pyometra, venereal tumor mammary tumors, dystocia, mismating, pseudopregnancy and other cases have been reported in bitch ^[3, 4]. In a study on the diagnosis of canine disorders found that the reproductive system was the most frequently affected system in females, of which 50 percent of the bitches had pyometra ^[5]. Hence the present study was undertaken with the objective to record the prevalence of various Canine reproductive disorders in Udaipur city.

Materials and Methods

The present investigation was studied the incidence of various reproductive cases of last 3 year during was recorded during 2018-2020 at veterinary polyclinic Udaipur. The incidence of different gynaecological cases was analysed along with age-wise distribution of gynaecological cases attended in dogs previous 3 year were also studied. Total 387 gynaecological cases were registered in bitches during this period used for this study.

Results

Year-wise and overall incidence of different gynaecological cases attended in dogs during the period under study (2018-20) at the Veterinary Polyclinic, Udaipur are presented in table 1 and is also depicted in Figure 1. Total 387 gynaecological cases were registered in bitches during 2018-2020

Among the 387 gynaecological cases, the highest incidence was of pyometra (73 cases/18.86 percent), followed in

descending order by elective sterilization (63 cases/16.28 percent), caesarean section (54 cases/13.95 percent), pregnancy diagnosis (51 cases/13.18 percent), pseudo-pregnancy (19 cases/4.91 percent), mammary tumours (18 cases/4.65 percent), mis-mating (18 cases/4.65 percent), anoestrous (17 cases/ 4.39 percent), dystocia (16 cases/4.14 percent) and canine transmissible venereal tumors (13 cases/ 3.36 percent) and other miscellaneous (45 cases/11.63 percent).

Table 1: Incidence of various gynaecological cases (No.) recorded in dogs during the year 2018-20 at Veterinary Polyclinic, Udaipur

S. No.	Type of cases	Year 2018-19	Year 2019-20	Year 2020-21	Total	Percentage
1.	Pyometra	18	24	31	73	18.86
2.	Elective sterilization (ovariohysterectomy)	20	15	28	63	16.28
3.	Caesarean section	18	14	22	54	13.95
4.	Pregnancy diagnosis	14	16	21	51	13.18
5.	Miscellaneous (repeat breeder, Estrus detection)	11	16	18	45	11.63
6.	Pseudo-pregnancy	6	4	9	19	4.91
7.	Mammary tumor	3	8	7	18	4.65
8.	Anoestrus	6	7	4	17	4.39
9.	Mismating	4	8	6	18	4.65
10.	Dystocia	5	7	4	16	4.14
11.	Transmissible venereal tumour	3	5	5	13	3.36
	Total	108	124	155	387	100

Fig 1: Incidence of various gynaecological cases recorded in dogs during the year 2018-20 at polyclinic Udaipur

Age-wise distribution of canine gynaecological cases attended at the Veterinary Polyclinic, Udaipur during the period of incidence (2018-20) is given in Table 2, and illustrated by Figure 2. The highest occurrence of gynaecological cases was

found in young 0- 5 years old bitches (178 cases /44.5 percent), followed by middle age group of 6-10 years (144 cases/ 36 percent) and the lowest in older bitches of 11-15 years of age (78 cases/ 19.5 percent).

Table 2: Age-wise distribution of gynaecological cases (No.) attended in dogs during the year 2018-20 at Veterinary Polyclinic, Udaipur

S. No.	Age groups	Year 2018-19	Year 2019-20	Year 2020-21	Total	Percentage
1.	0-5 Years	60	45	73	178	44.5
2.	6-10 years	32	55	57	144	36.0
3.	11-15 Years	20	25	33	78	19.5
	Total	112	125	163	400	100

Fig 2: Age-wise distribution of gynaecological cases attended in dogs during the year 2018- 20 at polyclinic, Udaipur

Discussion

The incidence of pyometra observed in present study (18.86 percent) was correlated with 20.3 percent among other reproductive cases [6]. Other authors reported prevalence of pyometra was 23.25 percent [4], 31.77 percent [7], 40 percent [8] and 40 percent [9] respectively, which is higher with the present findings. Likewise, lower incidence of pyometra was 2.2 percent [10], 3 percent [11], 12.12 percent [3], 15.2 percent [12] and 16.72 percent [13] recorded respectively. This was lower than present findings due to lower incidence of pyometra in the former colony may be due to the dog's shorter life spans.

The second most common clinical cases reported was of elective sterilization as 63 cases (16.28 percent); which is correlated with 11.61 percent [14]. In previous study lower prevalence of elective sterilization was reported 3.63 percent [15] and 9.88 percent [4], respectively.

The proportion of bitches brought for pregnancy diagnosis was 13.18 percent compared well with 16.25 percent [4]. The higher proportion of cases of pregnancy diagnosis as 21.14 percent [15], 25 percent [7] and 29.09 percent [3] respectively, whereas lower incidence was 8.1 percent [16] recorded.

The proportion of miscellaneous cases was 11.63 percent, which include cases of estrous detection and repeat breeding and others reproductive cases. 21.81 percent [4] cases of estrus detection was recorded. The incidence was 6.1 percent [16] observed in bitches presented in clinic for mating advice. Thus, a higher percentage of bitches brought to polyclinic for estrous detection and repeat breeding.

Pseudo-pregnancy was reported in 4.91 percent, which is corresponding with findings 4 percent [8], 4.24 percent [3] and 5 percent [9]. However, a higher incidence was 11.58 percent [7] and lower incidence 1.34 percent [14] noticed.

The occurrence of mammary tumours was recorded only in 4.65 percent cases, which was lower than 16.52 percent [14] and 22.22 percent [4].

Out of various reproductive cases 4.65 percent were of mismating. The incidence of present study was higher than the previous findings viz. 2.67 percent [4], 3.12 percent [14], 3.63 percent [3]. On the other hand, 1.14 percent [15] incidence

of mismating was recorded which is lower incidence than present finding.

The incidence of anoestrous was recorded in 4.39 percent cases, which is lower than the previous findings of anoestrous as 6.06 percent [3] and 6.09 percent [7] and higher than 2.26 percent [4].

Dystocia was recorded in 4.14 percent of bitches. It was reported incidence of dystocia varying between 5-7 percent [17]. Uterine inertia was the common cause of dystocia [17, 18]. Some authors [7, 8] reported 11.58-12 percent which was higher incidence of dystocia as compared with present findings. The occurrence of canine dystocia among reproductive cases was 12 percent [9]. Abnormal parturition or dystocia occurs frequently in canines due to numerous fetal and maternal factors [20]. Dystocia may occur in about 5 percent of canine births but this may be high in the brachycephalic breeds [18].

Transmissible tumor cases was reported in 3.36 percent which is closely correlated with some earlier finding of TVT incidence ranging from 1.4 percent to 3.27 percent [11, 21]. However higher prevalence was recorded as 10.30 percent [3], 10.36 percent [7], 30 percent [9], 31 percent [8].

In the present study, the highest occurrence of gynaecological cases was found in young bitches age between 0-5 years old compared to others age group. The occurrence of gynaecological cases was found in 0- 5 years (young age group), 6-10 years old bitches (middle age group) and 11-15 years of age (older age group) was 44.5 percent (178 cases), 36 percent (144 cases) and 19.5 percent (78 cases). This study was agreement with findings of some previous authors who reported highest occurrence of gynaecological cases was found in young bitches 0-5 years of age (51.02 percent), followed by middle age group of 6-10 years (27.57 percent), older bitches of 11-15 years of age (20.58 percent) and the lowest in older bitches of >15 years (0.82 percent) of age [4].

Conclusion

In this survey, it was concluded that the main reproductive cases recorded in bitch below the age of 10 years were pyometra, elective sterilization, caesarean section, pregnancy

diagnosis, pseudo-pregnancy, mammary tumours, mis-mating, anoestrous, dystocia and canine transmissible venereal tumors. The findings revealed the significance of life-threatening diseases (pyometra, mammary tumors and transmissible tumor) of bitch in urban area of Udaipur.

Acknowledgement

The author are thankful to Department of Veterinary Gynaecology and Obstetrics, College of veterinary and animal science, Navania, Udaipur and Veterinary Polyclinic, Udaipur for providing all the facilities and guidelines during the course of search.

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