Surveillance and Prevalence of Canine Reproductive Disorders in Gujarat

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ABSTRACT

The epidemiological surveillance of canine reproductive disorders was carried out based on total 21852 clinical cases (9159 at the College Clinic, Anand, and 12693 at Polyclinic, Vadodara) attended in dogs over three years. Among them, the overall 486 (2.22 %) and 85 (0.39 %) cases were of gynecological and andrological nature, respectively. Amongst the gynaecological cases, the highest incidence was of pyometra (23.25 %), followed in descending order by mammary tumours (22.22 %), pregnancy diagnosis (16.25 %), elective sterilization (9.88 %), CTVG (7.61 %), proestrus bleeding (5.97 %), pseudo-pregnancy (3.06 %), misalliance (2.67 %), anestrus (2.26 %), dystocia (1.65 %), abortion (1.03 %) and Cesarean (0.82%). Among the andrological cases, the highest cases were of venereal granulomas (31.76 %) followed in descending order by scrotal dermatitis (18.82 %), castration (12.94 %), orchitis (7.06 %), cryptorchidism, paraphimosis and balanoposthitis (5.88 % each), prostatic hyperplasia and testicular tumor (4.70 % each) and testicular hyperplasia (2.35 %). The breed most prone to gynecological disorders was non-descript (51.65 %), Pomeranian (16.25 %), German Shepherd, Labrador (6.79 % each) and Doberman (5.97 %). Maximum cases were in the young age group of 0-5 years (51.02 %), followed by the middle age group of 6-10 years (27.57 %) and older bitches of 11-15 years of age (20.58 %). The major clinical modalities and their management strategies adopted have also been summarized. The results signified the importance of life-threatening diseases like pyometra, mammary tumors, and CTVG in pet dogs in urban areas of middle Gujarat.

Keywords: Canine, Gujarat, Incidence, Major clinical entities, Reproductive disorders.

Ind J of Vet Sci and Biotech (2020): 10.21887/ijvsbt.15.4.13

INTRODUCTION

Due to the changed lifestyle, pet dogs are prone to a number of general and reproductive health disorders. Moreover, awareness of canine health and diseases has increased over the years in India; as a result, large numbers of canine cases are presented to the different clinics, especially in metros and other big cities. Egenvall *et al.* (2000), in a study on the diagnosis of canine diseases, observed the genital system to be the most commonly affected system in females, within which 50 % of the bitches had pyometra. The reports regarding such surveys are meager from India (Deka *et al.*, 2005; Joseph *et al.*, 2005; Dabhi *et al.*, 2005; Gupta *et al.*, 2013) and there is a paucity of information on the incidence of various reproductive disorders in canines, particularly in Gujarat (Dabhi *et al.*, 2005). Hence this retrospective study was conducted to record the pattern of occurrence of various reproductive physio-pathologies, overall and in relation to age and breed of dogs, in middle Gujarat.

MATERIALS AND METHODS

The present surveillance work was undertaken during the year 2011-12. The records of dogs (n=21852) registered for diagnosis and treatment of various ailments from around middle Gujarat during the past three years (2008-11) at the Veterinary Clinical Complex of the College, Anand (n=9159) and at Veterinary Polyclinic, Vadodara (n=12693), were

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used to work out the incidence of reproductive disorders in either sex of the canine. The prevalence of different gynecological and andrological cases was analyzed overall as well as breed-wise and age-wise for pooled cases of both the locations. The major clinical entities that emerged out of the analysis in females, such as pyometra, mammary tumors, CTVG, etc. were also screened for clinical signs and mode of management adopted including elective sterilization over the period. The purpose was to get the trend of cases that are being emerged out due to increasing awareness of pet owners in the urban areas of Gujarat so that due

attention can be given to improve their diagnosis and clinical management.

Results and Discussion

Of the total 21852 clinical cases attended in canines at two clinics, 486 (2.22 %) and 85 (0.39 %) were of gynaecological and andrological nature, respectively. The details with respect to their incidence and the breed and age most susceptible are presented in Tables 1 to 4.

Overall Incidence and Nature of Reproductive Problems

Among the 486 gynaecological cases attended, the highest incidence was of pyometra (23.25 %), followed in descending order by mammary tumours (22.22 %), pregnancy diagnosis

Table 1: Incidence of various Gynaecological cases recorded in bitches over three years period (2008-11) at Veterinary Clinics

Sr. No.	Type of cases	Gynecological cases	
		Number	Percent
1	Pyometra	113	23.25
	(a) Open pyometra	86	17.69
	(b) Close pyometra	20	04.12
	(c) Stump pyometra	07	01.44
2	Pseudo-pregnancy	15	03.06
3	Anoestrus	11	02.26
4	Proestrus bleeding	29	05.97
5	Misalliance	13	02.67
6	Pregnancy diagnosis	79	16.25
7	Dystocia	08	01.65
8	Caesarian section	04	00.82
9	Post-whelping weakness	11	02.26
10	CTVG	37	07.61
11	Mammary tumor	108	22.22
12	Elective sterilization	48	09.88
13	Repeat breeder	02	00.41
14	Estrus sickness	03	00.62
15	Abortion	05	01.03
Total		486	100.00

Table 2: Incidence of various Andrological cases recorded in dogs over three years period (2008-11) at Veterinary Clinics

Sr. No.	Type of cases	Andrological cases	
		Number	Percent
1	Castration	11	12.94
2	Orchitis	06	07.06
3	Venereal granuloma	27	31.76
4	Scrotal dermatitis	16	18.82
5	Prostatic hyperplasia	04	04.70
6	Cryptorchidism	05	05.88
7	Testicular tumor	04	04.70
8	Testicular hyperplasia	02	02.35
9	Paraphimosis	05	05.88
10	Balanoposthitis	05	05.88
Total		85	100.00

(16.25 %), elective sterilization (9.88 %), contagious transmissible venereal granuloma - CTVG (7.61 %), proestrus bleeding (5.97 %), pseudo-pregnancy (3.06 %), misalliance (2.67 %), anestrus & post-whelping weakness (2.26 % each), dystocia (1.65 %), abortion (1.03 %), Cesarean (0.82%) and others (Table 1).

Among the 85 andrological cases, the highest cases were of venereal granulomas (31.76 %) followed by scrotal dermatitis (18.82 %), castration (12.94 %), orchitis (7.06 %), cryptorchidism, paraphimosis and balanoposthitis (5.88 % each), testicular tumour and prostatic hyperplasia (4.70 % each), and testicular hyperplasia (2.35 %) in descending order (Table 2).

The incidence of pyometra observed in the present study (23.25 %) compared well with the reports of Deka (2003), Hagman (2004), Dabhi *et al.* (2005) and Gupta *et al.* (2013), but was higher than that reported by Gandotra *et al.* (1993), and lower than the observations of others (Borresen and Skrede, 1980; Bojrab, 1985; Egenvall *et al.,* 2000). However, the occurrence of mammary tumors (22.22 %) was higher than that reported by Bojrab (1985) and Dabhi *et al.* (2005). In the present study, among the cases presented for pregnancy diagnosis (16.25%), the proportion was lower at Vadodara polyclinic and higher at College Clinic, while for other cases, there was no such difference in location wise prevalence of different gynecological disorders. Ajala *et al.* (2011) reported the proportion of pregnancy diagnosis cases as 8.1 %. Gandotra *et al.* (1993) observed a higher incidence of CTVG (28.65 %) and lower incidence of anoestrus (1.19 %) at Ludhiana as compared to the present findings. Deka (2003) from Jabalpur reported 56.06% cases of pregnancy, 27.27 % pyometra, and 13.73 % pseudo-pregnancy among 66 bitches.

Deka *et al.* (2005) reported 22.4% of cases of gynecological disorders among 3854 bitches presented at Jabalpur College Clinic over a decade (1993-2002). Josepth *et al.* (2005) at Madras Veterinary College recorded 61.9% cases of physiological conditions like pregnancy diagnosis and breeding advice and 38.1% cases of pathological conditions among 2498 canine cases analyzed. Among the later, pyometra was the highest (12.6%), followed by postpartum complications (7.6%), pseudo-pregnancy (6.3%), dystocia (2.5%), anestrum (1.7%) and venereal tumor (1.4%). The present findings, to some extent, are in line with these reports.

Age and Breed Wise Distribution of Gynaecological Disorders

Age-wise and breed-wise distribution of canine gynecological cases attended in dogs during the period of surveillance is presented in Tables 3 and 4.

The highest occurrence of gynecological cases was found in young bitches 0-5 years of age (51.02 %), followed by middle age group of 6-10 years (27.57 %), older bitches of 11-15 years of age (20.58 %) and the lowest in older bitches of

Table 3: Age-wise distribution of Gynaecological cases attended in dogs during three years period (2008-11) at Veterinary Clinics

Sr. No.	Age groups	Gynecological cases	
		Number	Percent
1	0-5 years	248	51.02
2	6-10 years	134	27.57
3	11-15 years	100	20.58
4	>15 years	04	00.82
Total		486	100.00

Table 4: Breed-wise distribution of Gynaecological cases attended in dogs during the three years (2008-11) at Veterinary Clinics

Sr. No.	Breeds	Gynecological cases	
		Number	Percent
1	Pomeranian	79	16.25
2	German Shepherd	33	06.79
3	Non-Descript	251	51.65
4	Doberman	29	05.97
5	Labrador	33	06.79
6	Great Dane	12	02.47
7	Boxer	09	01.85
8	Spitz	16	03.29
9	Pug	04	00.82
10	Rottweiler	05	01.03
11	Golden retriever	02	00.41
12	Dalmatian	02	00.41
13	Dachshund	02	00.41
14	Lahasapso	03	00.62
15	St. Bernard	01	00.21
16	Cocker spaniel	05	01.03
Total		486	100.00

>15 years of age (Table 3). Only the proportion of older cases (11-15 yrs age group) presented at Vadodara Clinic was higher than at Anand (33.33 vs. 14.20 %); otherwise, for the rest of groups, there was no such difference between two locations. Hagman *et al.* (2011) recorded the mean age of 7.9 years (range 0.75-14 years) among 87 canine pyometra cases. Joseph *et al.* (2005) reported a higher incidence of the venereal tumor and pyometra in the age group of above 10 years, pseudo-pregnancy in 5-8 years and pregnancy diagnosis in 2-4 years old bitches.

The breed most prone to gynecological disorders was non-descript (51.65 %), followed in decreasing order by Pomeranian (16.25 %), German Shepherd and Labrador (6.79 % each), Doberman (5.97 %), Spitz (3.29 %), Great Dane (2.47 %) and others (Table 4). Among the cases presented at two locations, the proportion of cases in Pomeranian breed was much higher (33.95 vs 7.41 %) and that of the non-descript breed was much lower (22.84 vs 66.05%) at Vadodara Clinic than at Anand, otherwise for rest of the breeds there was no such difference between locations.

Greater gynaecological cases recorded in non-descript and Pomeranian breeds and in younger age group of dogs during the period under surveillance could be due to greater gross population of these categories of animals in the area under survey. Wakanker (1993), Dave (2002), Dabhi *et al.* (2005) and Ajala *et al.* (2011) also reported non-descript, Pomeranian, German Shepherd and Doberman as the most affected breeds with reproductive problems. The age of bitches having different reproductive disorders was also, to some extent, similar to their observations. Pseudopregnancy was negatively related to pyometra occurrence as 64% cases were having no history of pseudo-pregnancy, but nulliparity was significantly related to pyometra as 86% cases were nulliparous (Ajala *et al.*, 2011).. The higher incidence of gynecological cases observed in the younger age group in our study could be due to a greater population of younger dogs presented for investigation and treatment. Joseph *et al.* (2005) also opined that the highest incidence of reproductive conditions (38.7%) observed in the Pomeranian breed was probably due to larger numbers of cases presented in that breed.

Major Clinical Entities

The major clinical entities that emerged out of the analysis and clinically managed in female dogs were pyometra, mammary tumors, CTVC, etc. including elective sterilization over the three years of records surveyed. Open pyometra with the history of estrus some 30 to 50 days back and classical signs of vaginal discharge, anorexia, dullness/lethargy, vomition, polydipsia, polyuria, and toxemia was the major clinical entity in middle-aged mostly nulliparous bitches. Ovariohysterectomy was performed in most cases as a treatment of choice in them with a more than 95% recovery rate. The mammary neoplasm was the second major clinical entity for which mammectomy was the preferred treatment if owner consented, but metastasis was the complication in many cases with fatality later on. The third major entity was venereal granuloma in which female and male dogs with signs of foul smelling bloody vulvar/preputial discharge and fragile granular growths on the mucosa of vulvo-vagina and prepuce/penis were presented. These cases were treated with chemotherapy (Vincristicin) alone or accompanied with surgical intervention. However, recurrence was noted in 10-15% cases.

The cases of proestrus bleeding and misalliance were suitably handled with technical advice for breeding at estrus few days later in former and injecting stilboesterol within 3 days of misalliance in later (Mandhwani *et al.,* 2018). Pregnancy diagnosis was mostly done based on abdominal palpation and radiography in selected cases. Other clinical cases were managed as per routine protocol. The elective sterilization of some 10% female dogs was also performed using standard protocol upon genuine request of the pet owners.

It was concluded that the pyometra, mammary neoplasms, CTVG, proestrus bleeding, pregnancy diagnosis, and spaying were the major cases in female dogs, and venereal granulomas, scrotal dermatitis, castration, orchitis and other

testicular and prostatic disorders in male dogs that were attended suitably. Non-descript and Pomeranian were the most prominent breeds of dog prone to gynaeco-clinical disorders in the area, so also the animals of below 10 years of age group. The observations signified the importance of life threatening diseases like pyometra, mammary tumours and CTVG in pet dogs in urban areas of middle Gujarat.

ACKNOWLEDGEMENT

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