RESEARCH ARTICLE

Prevalence of Major Reproductive Disorders in Canines with Reference to Age, Sex and Breed in Central Gujarat

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Abstract

A retrospective study was undertaken to assess the prevalence of various reproductive disorders attended over the last three years (2017-20) at VCC, Anand in either sex of canine. Screening of 9963 case records revealed 602 (6.04 %) cases of gynecological disorders and 23 (0.23 %) cases of andrological disorders. The highest cases in female dogs were of pregnancy diagnosis (30.89 %), followed in descending order by pyometra (25.41 %), mammary tumor (11.46 %), CTVG (7.81 %), spaying (5.65 %), pseudo-pregnancy (4.32 %), dystocia (3.32 %), vaginal prolapse (2.99 %), misalliance (2.32 %), abortion (0.99 %), normal whelping (0.49 %) and miscellaneous (3.82 %). Among the male dogs, the highest cases were of venereal granuloma (21.74 %), followed by phimosis (17.39 %), balanoposthitis (13.04 %), prostate enlargement (13.04 %), scrotal edema (13.04 %), castration (8.69 %), testicular hyperplasia (4.35 %), testicular tumor (4.35 %) and orchitis (4.35 %). The breeds most prone to gynecological disorders were Labrador (29.57 %), followed by Mongrel (22.42 %), Pomeranian (11.79 %), German Shepherd (11.46 %), Pug (6.64 %), Rottweiler (6.15 %), Doberman (3.50 %), Golden Retriever (3.17 %), and others. Similarly, the highest occurrence of gynecological cases was found in bitches of 0-3 years age group (46.84 %), followed by 4-6 years (23.75 %), 7-9 years (14.29 %) and 10-12 years of age (11.30 %). The higher gynecological cases recorded in Labrador and Mongrel breeds and in younger age groups of dogs could be due to the higher gross population of these animals in the study area of central Gujarat.

Keywords: Age, Breed, Canine, Prevalence, Reproductive disorders, Sex.

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Introduction

Pet keeping and awareness among pet owners has increased tremendously over last few years. However, for changed lifestyle, the pet dogs are prone to a number of general and reproductive health disorders. As a result, large numbers of canine cases are presented to the different clinics, especially in metros and other big cities for prophylaxis and clinical management. In a Swedish study on the diagnosis of canine diseases, the most common affection of female reproductive system was pyometra (Egenvall *et al*., 2000). The reports regarding surveillance of canine reproductive disorders are meager from India (Deka *et al*., 2005; Joseph *et al*., 2005; Dabhi *et al*., 2005; Gupta *et al.,* 2013, 2020) and Gujarat in particular (Dabhi *et al*., 2005; Gupta *et al.,* 2020). Hence this retrospective study was conducted to record the pattern of occurrence of various reproductive physio-pathologies, overall and in relation to age, sex and breed of dogs, in central Gujarat.

Materials and Methods

The present retrospective surveillance was carried out during the year 2019-20 at the Veterinary Clinical Complex, College of Veterinary Science and Animal Husbandry, AAU, Anand. The case records of canine patients (n = 9963) presented during the last 3 years (2017-20) were screened and various gynecological and andrological disorders were classified and age, breed and sex-wise frequencies were worked out to assess the prevalence and trend of major reproductive disorders in hospital population of canines and thereby to decide prophylactic and clinical management strategies and make the pet owners aware of canine breeding and reproduction problems for taking timely action towards the welfare of their pets.

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Results and Discussion

Categorization of Reproductive Disorders

In all, 9963 clinical cases of canines were presented at VCC during the period of last three years (2017-20). Out of them,

602 (6.04 %) cases were of gynecological nature and 23 (0.23 %) andrological nature. The types of gynecological and andrological disorders noted in hospital population of dogs and their frequency of occurrence are presented in Table 1 and Fig. 1, respectively.

Amongst the 602 gynecological cases recorded, the highest cases were presented for pregnancy diagnosis (30.89 %), followed by pathophysiological conditions like pyometra (25.41 %), mammary gland tumors, canine transmissible venereal granuloma (CTVG), spaying, pseudo-pregnancy, dystocia, vaginal prolapse, misalliance, abortion, normal whelping and miscellaneous cases. The prevalence of cases with open pyometra was significantly higher (22.76 %) than closed pyometra (2.66 %), while the misalliance cases were 2.32 % (Table 1).

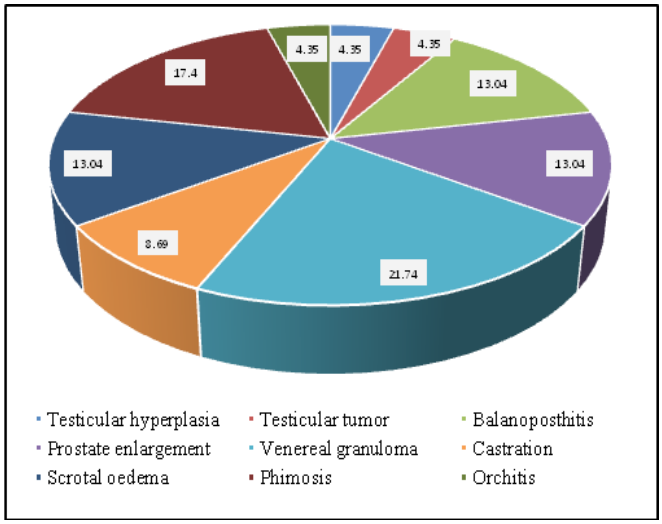

Fig. 1: Prevalence of different Andrological cases in canines presented at.VCC, Anand

Table 1: Prevalence of gynecological cases in hospital population of dogs at VCC, Anand

Sr. No.	*Category of cases*	*Total*	*Percentage*
1	Pyometra	153	25.41
	(a) Open pyometra	137	22.76
	(b) Closed pyometra	16	02.66
2	Pregnancy diagnosis	186	30.89
	(a) PD +ve	86	14.28
	(b) PD –ve	100	16.61
3	Pseudo-pregnancy	26	04.32
4	Spaying	34	05.65
5	Misalliance	14	02.32
6	CTVG	47	07.81
7	Mammary gland tumor	69	11.46
8	Vaginal prolapse	18	02.99
9	Normal whelping	03	00.49
10	Dystocia	20	03.32
	(a) Caesarean section	10	01.66
11	Abortion	6	00.99
12	Miscellaneous	23	03.82
Total		602	100.00

Amongst the 23 andrological cases in male dogs, the highest cases were of venereal granuloma (21.74 %), followed by phimosis (17.39 %), balanoposthitis, prostate enlargement, scrotal edema (13.04 % each), castration (8.69 %), testicular hyperplasia, testicular tumor and orchitis (4.35 % each) (Fig. 1).

According to Josepth *et al*. (2005) pyometra was the highest (12.6%), followed by postpartum complications (7.6%), pseudo-pregnancy (6.3%), dystocia (2.5%), anestrum (1.7%) and venereal tumour (1.4%). Our findings, to some extent are in line with this report and those of Deka *et al*. (2005) from Jabalpur and Gupta *et al*. (2020) from the same hospital of Gujarat.

The prevalence of pyometra observed in the present study (25.41 %) compared well with the earlier reports of Arora (2005), Dabhi *et al*. (2005), Hagman (2018), and Gupta *et al*. (2020), but was higher than that reported by Ajala and Fayomi (2011), Sathiamoorthy and Raja (2011) and Mandhwani *et al*. (2018), and lower than the observations of Egenvall *et al*. (2000) and Ramsingh *et al*. (2013). However, the proportion of cases presented for pregnancy diagnosis (30.89 %) was higher than that documented by Dabhi *et al*. (2005), Ajala and Fayomi (2011) and Gupta *et al*. (2020). The occurrence of mammary tumors (11.46 %) compared well with Dabhi *et al*. (2005), but was lower than the prevalence recorded by Arora (2005) and Gupta *et al*. (2020), and higher than that reported by Sathiamoorthy and Raja (2011). The incidence of CTVG (7.81 %) recorded in this surveillance was in accordance with Gupta *et al*. (2013, 2020).

Breed and Age-Wise Distribution

The breed and age-wise distribution of gynecological cases attended in dogs during the period of surveillance (2017-20) is presented in Tables 2 and 3. The breed in which most cases of gynecological disorders recorded was Labrador (29.57 %), followed by Mongrel (22.42 %), Pomeranian (11.79 %), German Shepherd dogs (11.46 %), Pug (6.64 %), Rottweiler (6.15 %), Doberman (3.50 %), Golden Retriever (3.17 %), Cocker Spaniel (1.00 %), and others (Table 2).

The highest occurrence of gynecological cases was found in 0-3 years young bitches (46.84 %), followed by 4-6 years of age (23.75 %), 7-9 years of age (14.29 %) and older bitches of 10-12 years of age (11.30 %) and the lowest in very old bitches of >12 years of age (3.82 %) (Table 3). The higher gynecological cases recorded in Labrador and Mongrel breeds of dogs during the period of surveillance could be due to higher gross population of these types of animals in the area under survey.

The present findings of breed most affected with reproductive disorders was in line with the observations of Arora (2005), Dabhi *et al*. (2005), Joseph *et al*. (2005), Ajala

Table 2: Breed-wise distribution of gynecological cases attended in canines

Sr. No.	*Breeds*	*Total*	*Percentage*
1	Labrador	178	29.57
2	German Shepherd	69	11.46
3	Pomeranian	71	11.79
4	Pug	40	06.64
5	Mongrel	135	22.42
6	Rottweiler	37	06.15
7	Golden Retriever	19	03.17
8	Doberman	21	03.50
9	Lhasa Apso	04	00.67
10	Beagle	03	00.50
11	Cocker Spaniel	06	01.00
12	St. Bernard	03	00.50
13	Boxer	04	00.67
14	Tibetan terrier	01	00.16
15	French bulldog	01	00.16
16	English mastiff	01	00.16
17	French mastiff	02	00.33
18	Belgian Shepherd	02	00.33
19	Shih Tzu	02	00.33
20	American bulldog	01	00.16
21	Dachshund	02	00.33
Total		602	100.00

and Fayomi (2011) and Gupta *et al*. (2020). The age of bitches having different reproductive disorders was to some extent similar to observations made by above workers. The greater incidence of gynecological cases observed in younger age group (0-3 years) in present study could be due to higher population of younger dogs presented for disease investigation and therapy.

Conclusion

The study revealed the magnitude of different reproductive problems in the male and female dogs in the hospital population, which is useful to design prophylactic and clinical management strategies and make the pet owners aware of canine breeding and reproduction problems for taking timely action towards welfare of their pets.

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Table 3: Age-wise distribution of gynecological cases attended in canines

Sr. No.	*Age categories*	*Total*	*Percentage*
1	0-3 Years	282	46.84
2	4-6 Years	143	23.75
3	7-9 Years	86	14.29
4	10-12 Years	68	11.30
5	>12 Years	23	03.82
Total		602	100.00

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