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Incidence of various reproductive disorders in different breeds of bitches

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Abstract
The incidence of various reproductive disorders in bitches was calculated by studying the records of Teaching Veterinary Clinical Service Complex Mhow for past five years (2007- 11). The various reproductive disorders found in female dogs like pyometra, excessive vaginal bleeding, venereal granuloma, post-partum complications, pseudo-pregnancy, abortion, anestrous, dystocia, genital prolapse, cystic endometrial hyperplasia & cystic ovaries incidence was calculated on the basis of breed of bitches. The incidence of physiological conditions like pregnancy and Cyclicity in bitches brought to the clinic during retrospective data based study was higher 315 / 2963 (10.63%) than the incidence of reproductive disorders 248 / 2963 (8.23%).

Keywords: bitches, breeds, pyometra, reproductive disorders, vaginal bleeding

Introduction
In the present scenario, dog breeding has become an international hobby and the dog is considered as a best companion to human beings. The breeders/owners are very much concerned about the reproductive health of their pet for future fertility and to prevent peri-parturient reproductive disorders especially dystocia. Multiple types of reproductive disorders exist in canines (Roberts, 1971) [16] but the exact information regarding their prevalence is meager. Obtaining this knowledge is necessary so that more attention can be paid towards developing therapeutic measures for the most prevalent reproductive disorders they suffer from. The female dogs suffering from various reproductive disorders like pyometra, excessive vaginal bleeding, venereal granuloma, post-partum complications, pseudo pregnancy, abortion, anoestrous, dystocia, genital prolapse, cystic endometrial hyperplasia & cystic ovaries incidence was calculated on the breeds suffering. Similar type of study done by Dabhi *et al*. (2005) [2]. incidence of infertility higher due to ovarian diseases (ovarian cysts or ovarian tumours) in older bitches. Ovarian cysts and tumours were occasionally observed in young bitches reported by Romagnoli (2003) [15].

Materials and Methods
The incidence of various reproductive disorders in bitches calculated on their breed wise categorization by studying the records of Teaching Veterinary Clinical Service Complex Mhow for past five years (2007- 11). Percentage incidence was calculated as:

$$\text{Incidence (\%)} = \frac{\text{No. of respective breed females with reproductive disorders}}{\text{Total no. of ailing females admitted to clinics}} \times 100$$

Breed wise distribution was done as: Pomeranian, GSD, Labrador, Non Descriptive, Pug, Great Dane, Cross bred, Rotwiller, Bull Mastiff, Dalmatian and Dachshund.

Results and Discussion
The incidence of physiological conditions in present study like pregnancy and cyclicity of animals reported to clinic was higher than the incidence of reproductive disorders. Similar findings were observed by Joseph *et al*. (2005) [12]. This higher incidence of reproductive disorders might be due to location of referral clinic TVCC MHOW and which is situated near city. The incidence of reproductive disorders was calculated for past 5 years (2007- 11) and their breed wise categorization was done. The incidence of physiological conditions like pregnancy and cyclicity in bitches brought to the clinic during retrospective data based study

315 / 2963 (10.63%) than the incidence of reproductive disorders 248 / 2963 (8.23%).

Among various breeds highest incidence of reproductive disorders was observed in Pomeranian (29.83%) followed by GSD (28.22%), Labrador (19.35%), non-descriptive (8.06%), Pug (6.04%), Great Dane (2.41%), Cross bred (2.82%), Rotwiller (0.80%), Bull Mastiff (0.80%), Dalmatian (0.80%) and Dachshund (0.80%) respectively (Table 1). The findings of present study coordinate with Dave (2002) [3], Dabhi *et al*. (2005) [2] and Gupta *et al*. (2013) [7]. They also found highest incidence of reproductive disorders in pomerian than other breeds. Higher incidence of reproductive disorders in Pomeranian breed may be due to large number of cases presented of that particular breed. While Ajala *et al*. (2011) [1] reported the highest incidence of reproductive disorders in Alsatian breed (27.4%).

Table 1: Breed wise incidence of reproductive disorders

Breed (248)*	Incidence (%)
Pomeranian (74)	29.83
GSD (70)	28.22
Labrador (48)	19.35
Non Descriptive (20)	8.06
Pug (15)	6.04
Great Dane (6)	2.41
Cross bred (7)	2.82
Rotwiller (2)	0.80
Bull Mastiff (2)	0.80
Dalmatian (2)	0.80
Dachshund (2)	0.80

*Figures in parenthesis indicate total no. of animals

Among various reproductive disorders there was highest incidence of pyometra (30.24%), compared well with the reports of Deka (2003) [4], Hagman (2004) [9], Dabhi *et al*. (2005) [2], Honparkhe *et al*. (2010) [10], Gupta *et al*. (2013) [7] and Gupta *et al*. (2020) [8] followed by venereal granuloma (23.38%), post-partum complications (10.48%), dystocia (8.06%), excessive vaginal bleeding (7.66%), abortion (4.83%), pseudo pregnancy (4.43%), anoestrous (4.43%), prolapse (3.22%), cystic endometrial hyperplasia (2.01%) and cystic ovaries (1.20%) respectively (Table 2). Similar finding was observed by Dabhi *et al*. (2005) [2] whereas, (Gandotra *et al*., 1993: Johnston *et al*., 2001) [6, 13]. and Deka *et al*. (2004) [5], reported highest incidence of venereal granuloma in bitches. Uterine inertia has been considered as the most common cause for canine dystocia (Jackson, 2004) [11].

Table 2: Incidence of various reproductive disorders

Reproductive disorder (248) *	Incidence (%)
Pyometra (75)	30.24
Venereal granuloma (58)	23.38
Excessive vaginal bleed (19)	7.66
Postpartum complications (26)	10.48
Pseudo pregnancy (11)	4.43
Abortion (12)	4.83
Anoestrous (11)	4.43
Dystocia (20)	8.06
Genital Prolapse (8)	3.22
Cystic endometrial Hyperplasia (5)	2.01
Cystic ovaries (3)	1.20

*Figures in parenthesis indicate total no. of animals

Table 3: Breed wise incidence of individual reproductive disorder

Reproductive disorders	Pomeranian	GSD	Labrador	Non Descriptive	Pug	Great Dane	Bull Mastiff	Cross bred	Dachshund	Rotwiller	Dalmatian
Pyometra	41.33	22.66	17.33	9.33	6.66	1.33	0.00	0.00	1.33	0.00	0.00
Venereal granuloma	29.31	29.31	24.13	13.79	1.72	1.72	0.00	0.00	0.00	0.00	0.00
Genital Prolapse	62.5	12.5	0.00	12.5	12.5	0.00	0.00	0.00	0.00	0.00	0.00
Pseudo pregnancy	9.09	36.36	36.36	0.00	18.18	0.00	0.00	0.00	0.00	0.00	0.00
Excessive vaginal bleed	26.31	26.31	21.05	10.52	5.26	5.26	5.26	0.00	0.00	0.00	0.00
Post partum complications	23.07	46.15	15.38	0.00	3.84	7.69	0.00	3.84	0.00	0.00	0.00
Dystocia	25.00	20.00	25.00	10.00	5.00	0.00	10.00	0.00	0.00	0.00	5.00
Abortion	25.00	16.66	33.33	8.33	8.33	0.00	0.00	8.33	0.00	0.00	0.00
CEH	40.00	40.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cystic ovaries	0.00	33.33	0.00	0.00	0.00	0.00	0.00	0.00	33.33	0.00	33.33
Anoestrous	0.00	18.18	18.18	18.18	9.09	9.09	0.00	9.09	0.00	18.18	0.00

The incidence of pyometra was highest in Pomeranian (41.33%) followed by GSD (22.66%), Labrador (17.33%), Nondescript (9.33%) compaired with (Gupta *et al*., (2013) [7]: Ramsingh *et al*., (2013) [14] Pug (6.66%), Great Dane (1.33%)

and Dachshund (1.33%) respectively. Venereal granuloma was highest in Pomeranian (29.31%) and GSD (29.31%) followed by Labrador (24.13%), Non-descript (13.79%), Pug (1.72%) and Great Dane (1.72%) respectively. Genital prolapse was higher in Pomeranian (62.5%) followed by GSD, Non-descript and Pug (12.5%). Pseudo pregnancy was higher in GSD and Labrador (36.36%) each than Pomeranian (9.09%) and Pug (18.18%) respectively. The incidence of excessive vaginal bleeding was highest in Pomeranian (26.31%) and GSD (26.31%) followed by Labrador (21.05%), Non-descript (10.52%), Pug, Great Dane and Bull Mastiff (5.26%). Post-partum complications were highest in GSD (46.15%) than Pomeranian (23.07%), Labrador (15.38%), Great Dane (7.69%) Pug (3.84%) and Cross bred (3.84%) while the incidence of dystocia was highest in Pomeranian (25.00%) and Labrador (25.00%) followed by GSD (20.00%). Non-descript (10.00%) Bull Mastiff (10.00%), Pug (5.00%) and Dalmatian (5.00%). Higher incidence of abortion was observed in Labrador (33.33%) than Pomeranian (25.00%) and GSD (16.66%), Nondescript, Pug and Cross bred (8.33%). Cystic endometrial hyperplasia was higher in GSD and Pomeranian (40.00%) than Nondescript breeds (20. 00%).The incidence of cystic ovaries was equal among Dalmatian (33.33%), GSD (33.33%) and Dachshund (33.33%). Anoestrous was higher in Rottweiler, GSD, Labrador and Nondescript each (18.18%) than Pug, Great Dane and Cross bred (9.09%) respectively (Table 3).

Conclusions

In present retrospective study of the incidence of various reproductive disorders, it was observed that the Breed wise incidence of reproductive disorders was highest in Pomeranian, lowest in Rotwiller, Bull Mastiff, Dalmatian and Dachshund. In Incidence of various reproductive disorders pyometra is highest (30.24%), Cystic ovaries is lowest (1.20%).

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