

OCCURRENCE OF CUTANEOUS AND SUBCUTANEOUS NEOPLASMS IN CANINE

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Abstract: The present work was undertaken occurrence of cutaneous tumours in canine. Out of 103 samples collected, 96 were neoplastic conditions and seven were non-neoplastic conditions. Neoplastic conditions included 42 epithelial tumours (43.74%), 27 mesenchymal tumours (28.13%) and 27 round cell tumours (28.13%). Malignant tumours were 63. 55% and benign tumours 36. 45%. Pure breeds were predominantly affected (63.54%) compared to non-descript dogs (36.46%). Among the pure breeds, Spitz (29.17%), Labrador (11.46%) and Doberman (4.17%) were mainly affected. Mean age of occurrence of cutaneous tumours was 8.2 years. Cutaneous tumours mostly occurred in the age group of 6-10 years (39.58%) and equidistribution of cases was observed in 0-5 and 11-15 years age groups. Males were predominantly affected (53/96).

Keywords: Dogs, cutaneous tumours, cytology, histopathology.

Almost every domestic animal has the predilection for certain neoplasm in a particular organ or tissue. Of all species, dogs develop neoplasm twice as frequently as humans (Moulton, 1990). The reason for this high incidence of cutaneous neoplasm partially lies in the fact that the skin is permanently exposed to the influence of physical, chemical and other environmental factors as well as that the cutaneous neoplasms are easily recognized as early as in their initial stages (Bostock, 1986). Tumour of skin and subcutaneous tissues are accounting for approximately one third of all tumours encountered in the species. Carrying out the present work was driven by the increasingly frequent finding of these neoplasms, which had a population incidence of as high as 1.39 per cent (Gopal, 2007).

MATERIALS AND METHODS

The present work was conducted at the Department of Veterinary Pathology, Madras Veterinary College, Tamil Nadu Veterinary and Animal Sciences University, Chennai. Tissue samples from dogs were collected from cases of skin tumours which attended Small Animal Clinics of Madras Veterinary College Teaching Hospital, Chennai (2008-2009). Particulars of animals like breed, age and sex were recorded. Specific data such as history, clinical manifestations, location, size, shape, weight and cut surface of skin tumours were also collected. Smears prepared from FNAB or imprints from cutaneous tumours were either air dried or wet fixed in absolute isopropanol for 30 minutes and stained by Leishman–Geimsa (LG). Tissue samples fixed in 10% neutral buffered formalin were embedded in paraffin and 3-5 μm thickness sections were cut and stained with H&E. Whenever necessary, the sections were stained with toluidine blue, periodic acid Schiff's (PAS), Fontana, van-Gieson and Trichrome stains (Bancroft and Gamble, 2008).

RESULTS AND DISCUSSION

During the study period, 96 cutaneous tumours were recorded, out of which 57 were from surgically excised and 38 cases were classified based on cytological diagnosis Table 1. Out of 12,768 clinical cases examined per cent population incidence of cutaneous tumours in dogs was 0.75. This is 0.64 per cent lower than that reported by (Gopal, 2007) and 0.5 per cent lower than that recorded by (Nijaguna 2006). This might be due to the increased number of cases presented in the clinic during the period. Among the 96 neoplastic conditions recorded, epithelial tumours constituted 43.74 per cent, round cell tumours 28.13 per cent and mesenchymal tumours 28.13 per cent. This observation is in agreement with the findings of (Gopal 2007). The studies revealed that majority of neoplasms were malignant (63.54%), which agreed with the findings of Gopal (2007) who reported 59.81 per cent occurrence of malignant tumour. Among the different types of tumours occurrence of malignant tumours was higher in epithelial tumours (34.38%) when compared to the round cell (13.54%) and mesenchymal (15.63%) tumours. Nijaguna (2006) reported higher per centage i.e. 2-3 times more of malignant tumours of epithelial (78.58%), mesenchymal (58.86%) and round cell (51.86%) tumours.

BREED WISE OCCURRENCE

The breed wise occurrence of cutaneous tumours are given in Tables 2. Thirty five cutaneous tumours occurred in non-descript and 61 in pure breeds. Non-descript showed occurrence of 17 (17.72%), 7 (7.14%) and 11 (11.46%) and pure breeds in 25 (26.03%), 20 (20.99%) and

16 (16.67%) epithelial, mesenchymal and round cell tumours respectively. The overall incidence of cutaneous tumours higher occurrence in pure breeds than non-descript breeds. Among the percentage higher incidence of tumours was found in the Spitz and pure breeds showed higher incidence of cutaneous tumours (63.54%) than non-descript. The predominance of breed might be due to over representation due to preference for such breeds or cases reported. This agreed with the findings of (Rajni, 2005; Nijaguna, 2006 and Gopal, 2007).

SEX AND AGE WISE OCCURRENCE

Sex versus tumours type occurrence of cutaneous tumours are given Table 2. The overall incidence of cutaneous tumours was 53 in male and 43 in female dogs. Male dogs showed occurrence of epithelial tumours in 33, mesenchymal 8 and round cell tumours in 12; while female dogs showed 4, 19 and 15 respectively. The present study showed higher incidence of cutaneous tumours in males (55.21%) than in female (44.70%) dogs. This finding concurred with that of Sanja *et al.* (2005). Age wise incidence of tumours are given in Table 2. The cutaneous tumours occurred in the age range of 0-16 year with the mean age of 8.2 years. The incidence was 29 each in 0-5 and 11-15 and 38 in 6-10 years. The mean age of occurrence of cutaneous tumours in dogs was 8.2 years. The skin tumours to occurred more in 6-10 (39.58%) years age group. These findings agreed with those of (Sanja *et al.*, 2005 and Gopal 2007).

CONCLUSION

The present study was concluded that the population incidence of cutaneous tumours was 0.75 per cent in canine. The overall incidence of cutaneous tumours was higher in pure breeds than non-descript breeds. Male dogs showed occurrence of cutaneous tumours than female. The cutaneous tumours occurred in the age range of 0-16 years with the mean age of 8.2 years.

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TABLE-1 INCIDENCE OF CUTANEOUS TUMOURS IN CANINE

Nature of tumours	Benign		Malignant		Total	
	No.	Per cent	No.	Per cent	No.	Per cent
Epithelial tumours	09	9.36	33	34.38	42	43.74
Mesenchymal tumours	12	12.50	15	15.63	27	28.13
Round cell tumours	14	14.58	13	13.54	27	28.13
Overall total	35	36.45	61	63.55	96	100

TABLE-2**BREED-AGE-SEX WISE OCCURRENCE OF CUTANEOUS TUMOURS IN CANINE**

S. No.	Breed	Age in years			Sex		No.	Per cent
		0-5	6-10	11-15	Male	Female		
1	Non-descript	8	18	9	23	12	35	36.46
2	Spitz	3	12	13	16	12	28	29.17
3	Labrador	7	3	1	4	7	11	11.46
4	Doberman	2	1	1	1	3	4	3.13
5	German shepherd	1	0	2	2	1	3	4.17
6	Boxer	3	0	0	2	1	3	3.13
7	Great dane	2	0	1	2	2	3	3.13
8	Lhasa apso	0	2	1	0	3	3	3.13
9	Rajaplayam	2	0	0	2	0	2	2.08
10	Pomeranian	0	0	1	0	1	1	1.04
11	Dalmation	0	1	0	0	1	1	1.04
12	Dacshund	0	1	0	0	1	1	1.04
13	Irish setter	1	0	0	0	1	1	1.04
	Total	29	38	29	52	44	96	100