CANINE NEOPLASMS REPORTED FROM WAYANAD DISTRICT: A HISTOPATHOLOGICAL CLASSIFICATION

M. Surya Narayan Naick[1], Ajith Jacob George[2], N. Vijayan[3], Koshy John[4] and S. Sooryadas[5]
Dept. of Veterinary Pathology,
College of Veterinary & Animal Sciences University,
Pookode, Wayanad

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Abstract

Tumour cases reported in dogs in and around Wayanad district, Kerala were studied. Tissue specimens were collected from dogs from various sources viz. those brought to the University Veterinary hospitals and nearby veterinary hospitals and from canine carcasses brought for post-mortem examination to the department of Veterinary Pathology, College of Veterinary and Animal Sciences, Pookode, Wayanad. These were subjected to histopathological examination. Out of the sixty specimens, 53 per cent of the tumours were malignant and the rest were benign. Tumours of the skin and soft tissues were predominant over other tumours. Adenocarcinoma was the predominant type observed.

Keywords*: Incidence, Neoplasms, Canine*

Neoplasms constitute a group of diseases, frequently diagnosed in Veterinary practise. In the recent years, there is an increase in the occurrence of these diseases due to external and internal factors like ultraviolet radiations, oncogenic viruses, chemical carcinogens, dietetic and hormonal influences. It is one of the frequently encountered canine health problems, especially in older dogs. Nearly 16 to 24 per cent deaths in dogs are attributed to neoplasia (Sood *et al.,* 2008). Therefore, the present study was undertaken to investigate the pathoepidemiology of various neoplasms occurring among dogs in and around Wayanad district of Kerala.

Materials and Methods

Tumour tissue specimens were collected from dogs suffering from superficial tumours. A total of 60 tumour specimens were collected from dogs presented at the University Veterinary hospital and other nearby Veterinary hospitals. Tissue samples were fixed in 10% neutral buffered formalin for histopathology studies. The H & E stained slides were observed under microscope and lesions were noted.

Results and Discussion

Incidence of different types of canine tumours is shown in table 1.Among the various superficial tumours analysed histopathologically, malignant tumours were recorded in 32 cases (53.33%) and benign tumours in 28 cases (46.67%). This was in contrary to the study by Babu *et al*. (2012), who recorded 66 per cent benign tumours and 34 per cent malignant tumours. Among all the neoplasms, adenocarcinoma was observed in seven cases (11.67%). It was closely followed by six cases each of squamous cell carcinoma (10%) and fibroma (10 %). Among malignant tumours, adenocarcinoma (7/32) was seen in

1. M.V.Sc.Scholar
2. Associate Professor,CVAS,Mannuthy
3. Professor & Head, CVAS,Mannuthy
4. Associate Professor & Head, Department of Veterinary Microbiology
5. Assistant Professor, Department of Veterinary Surgery and Radiology
** Corresponding author (ajgeorge_07@yahoo.com)*

Table 1. Incidence of different types of canine tumours

Sl. No	Tumour Type	No of Cases	Percentage (%)
1	Adenocarcinoma	7	11.66
2	Squamous cell carcinoma	6	10.00
3	Fibroma	6	10.00
4	Fibrosarcoma	5	8.33
5	Fibroadenoma	5	8.33
6	Histiocytoma	5	8.33
7	Transmissible venereal tumour	3	5.00
8	Anal sac gland adenoma	2	3.33
9	Haemangioma	2	3.33
10	Lipoma	2	3.33
11	Liposarcoma	2	3.33
12	Lymphosarcoma	2	3.33
13	Melanoma	2	3.33
14	Osteosarcoma	2	3.33
15	Plasma cell tumour	2	3.33
16	Seminoma	2	3.33
17	Adamantinoma	1	1.66
18	Basal cell carcinoma	1	1.66
19	Hepatoid gland adenoma	1	1.66
20	Papilloma	1	1.66
21	Sertoli cell tumour	1	1.66
	Total	**60**	**100**

the highest frequency followed by squamous cell carcinoma (6/32) and fibrosarcoma (5/32). Malignant tumours were mainly encountered in the skin and mammary gland. The malignant tumours diagnosed were squamous cell carcinoma, adenocarcinoma, fibrosarcoma, liposarcoma, lymphosarcoma, osteosarcoma, melanoma, adamantinoma and plasma cell tumour. The benign tumours encountered were fibroma, fibroadenoma, histiocytoma, transmissible venereal tumour, anal sac adenoma, haemangioma, lipoma, hepatoid gland adenoma, seminoma, sertoli cell tumour and papilloma. Fibroma (6/28) was the most frequently observed benign tumour. Similar results were obtained by Gupta and Tiwari (2009).

Location or system wise classification of the tumours (Table 2) showed that the skin and soft tissue tumours were maximum in number - 28 cases (46.66 %) followed by mammary tumours in 15 cases (25.00 %), which was consistent with the findings of Sanja *et al*.(2005). Eight cases (13.33 %) of tumours pertained to the urogenital system; four cases (6.66 %) from the hemolymphatic system; two cases each from (3.33 %) from the alimentary tract and bone and a single case (1.66 %) from eye and ear origin. The tumours of other systems were diagnosed at a lower frequency. Babu *et al.* (2012) in their study recorded 32.8 per cent skin and soft tissues constituted, 29.51 per cent mammary tumours and 21.31 per cent tumours of the

Table 2. Location wise distribution of tumours

No.	Tumors	Incidence
1	Tumours of the skin and soft tissues	28
2	Mammary tumours of dog	15
3	Tumours of the urogenital system	8
4	Tumours of hemolymphatic system	4
5	Tumours of alimentary tract	2
6	Tumours of bone	2
7	Tumours of eye and ear	1
TOTAL		**60**

Fig. 1. Squamous cell carcinoma on the head of a dog as single nodular growth

Fig. 2. Circumscribed firm mass of fibrosarcoma found on the flank region of a dog

Fig. 3. Mammary gland tumour Ulcerated hard mass on ventral abdomen

Fig. 4. Anal sac gland adenoma – Round firm mass on the perianal region of a German shepherd

genital system. Tumours of the alimentary tract contributed 6.56 per cent, 4.92 per cent of tumours were from the haemolymphatic system, 3.3 per cent tumours were of eye and ear origin and one tumour case (1.64 per cent) from bone. The high incidence of cutaneous tumours could be attributed to the prolonged exposure of skin to the influence of physical, chemical and other environmental factors and theeasy accessible for clinical examinations (Sanja *et al*., 2005). The occurrence of mammary tumours at a higher rate could be due to hormonal involvement as reported by Rungsipipat *et al.* (2003).

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