

# Studies on Incidence, Histopathological features and Surgical management of Neoplasms in Canine

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## Abstract

Histopathological examination of 118 cases of spontaneously occurring canine neoplasms was conducted in the study and 109 (91.52%) were diagnosed to be neoplasm. Out of 109 tumours, histopathologically were benign tumour 52 (47.70%) and 57 (52.29%) were malignant neoplasm. The benign tumours diagnosed were fibroma (22.01%), Leiomyoma (3.84%), Lipoma (2.88%), Papilloma (7.33%), Adenoma (9.17%) and Fibroadenoma (2.75%) where as the malignant tumours encountered were Squamous cell carcinoma (11.52%), Basal Cell Carcinoma (5.50%), Mixed Tumour (0.96%), Rhabdomyosarcoma (2.88%), Veneral Granuloma (13.76%), Lymphosarcoma (5.76%), Fibrosarcoma (9.60%) and Adenocarcinoma (3.67%). The tumours were recorded ranging in age group from 6 month to 12 years of age. The percentage of malignant tumour (52.29%) was higher than benign tumour (47.71%).

**Keywords:** Neoplasm, Canine, Incidence, Histopathology, Surgical Management.

## Introduction

With the increased use of vaccines and antibiotics in domestic animals death due to infectious disease has decreased dramatically in the last two decades. Consequently, neoplasia has become of greater importance to the practicing veterinarians and more of their time is now employed in the diagnosis, prognosis and treatment of tumours.

Until recently our knowledge of the biological behavior of even the commonly occurring animal tumours was scanty, and many surgically excised neoplasms were not subjected to histological examination. However, with the increasing sophistication of veterinary practices and the laboratory services provided for them, this position is rapidly being rectified, as well as forming an important part of veterinary practice. The animal neoplasms provided an excellent model for the study of cancer in man. They approach the human situation very closely in that they arise spontaneously in an out bred population which in cases of the dog and cat, shares a similar environment to man.

## Materials and Methods

A total of 118 specimens (male and female) either on biopsy or at necropsy were received in the College of Veterinary Science and Animal Husbandry, Anjora

Durg (C.G.) during 2001 to 2007 from the different hospitals, college clinics and various private and Government agencies of Chhattisgarh State. These specimens were fixed in 10% formalin for histopathological studies. The history of neoplasm was recorded carefully.

Majority of the tumour bearing bitches were in the age group of 6 to 10 year. The details about age, affected site and other related history were also recorded. The age, location and histopathology confirmation of tumours have been presented in table.1.

## Results

The tumours were recorded ranging in age group from 6 month to 12 years of age. On histopathological examination of 118 suspected cases, 109 (91.52%) samples were confirmed to be different type of tumours. The percentage of malignant tumour (52.29%) was higher than benign tumour (47.71%) (Table-1).

## Discussion

In the present investigation histopathological examination of 118 suspected cases, 109 (91.52%) samples were confirmed to be of tumours. Among them 52 (47.70%) were benign tumour and 57 (52.29%) were malignant neoplasm. Conroy (1983) Jones *et. al.* (1977) and Gupta and Tiwari (2004) reported that fibroma

(22.01%) had been an uncommon skin tumour in comparison to fibrosarcoma. Mammary tumour and tumours of visceral organs were more common than skin tumours. The findings of Leiomyoma ( 3.84%) are in accordance with the findings of Tiwari *et.al.*(1999) and Braday and Roszel (1967) in canines. Lipoma (2.88%) are in accordance with the findings of Tiwari *et.al.*(1999) in canines Papilloma (7.33%) have been reported by Bostock and Owen(1975). Adenoma (9.17%) is in accordance with the findings of Tiwari *et.al.* (1999) and Davis(2000). The similar findings of Fibroadenoma (2.75%) are reported by Bostock and Owen(1975) and Vegad and Katiyar (1998) in canines. Squamous cell carcinoma are simulated the findings of Vishwanath *et.al.* (1998), Tiwari *et.al.*(2001) and Gupta and Tiwari (2004) in canines. Gupta and Tiwari (2004), Shakir and Sundar raj (1994) also reported same cases of Basal cell carcinoma (5.50%) in canines. Mixed Tumour(0.96%) are very rare. These findings are accordance with Vegad (1995) and Binoj, *et.al.*(2007). Rhabdolympbosarcoma (2.88%) are also very rare. Theilen and Made well (1979), Gupta and Tiwari (2004) reported that Rhabdolympbosarcoma are rare in occurrence in canines. The observations of Veneral Granuloma (13.76%) are in accordance with the findings of Tiwari *et.al.* (1999), Binoj, *et.al.*(2007) and Goswami *et.al.* (2008)in canines. Similar findings of Lymphosarcoma (5.76%) were also been reported by Theilen and Mdwel (1979) in canines. Fibrosarcoma (9.60%) are in accordance with Tiwari *et.al.*(1999), Goldschmidt and Hendrick (2002) and Binoj *et.al.* (2007), Adenocarcinoma (3.67%) are same as the finding of Vegad and Katiyar (1998) in canines. The tumours were recorded ranging in age group from 6 month to

12 years of age. The percentage of malignant tumour(52.29%) was higher than benign tumour (47.71%) (Table-1).

#### Surgical Management

All the animals affected with tumours were prepared for aseptic surgery. Premedication with atropine sulphate @ 0.65mg total dose and diazepam (1mg /kg i/v) or xylozine(@0.5mg /kg i/m) was done. Ten minutes later, ketamine hydrochloride was given i/v @5mg/kg body weight. The drug was repeated during the operation as per the requirement. The radied surgery performed in all the animals. Standard surgical techniques. Postoperative treatment included injection of antibiotics for 5 days, 3 days. Corticosteroids for 2 days and daily dressing with antiseptic ointment for 7 to 8 days. Skin sutures were removed in a time ranging from 7 to 12 days depending upon progress in healing. In all the animals the healing was uneventful and uncomplicated.

Thus, it is concluded that based on histopathological findings the diagnosis of the canine tumours can be done in time and radical surgery can be performed to cure or to prolong the life of canines.

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Table-1 Incidence and histopathological features of Neoplasms in Canine.

S.No.	Types of tumour	No. of cases (%)	Age of Dog	Weight of neoplasm
1.	Fibroma	24 (22.01)	7 month- 8 year	60 – 1.250 kg.
2.	Leiomyoma	4 ( 3.84)	5 - 12 year	20 – 120 gms.
3.	Lipoma	3 (2.88)	9 – 11 year	80 – 380 gms
4.	Papilloma	8 (7.33)	6 month-5 year	10-80 gms
5.	Adenoma	10(9.17)	1-8 year	120-650 gms
6.	Fibroadenoma	3(2.75)	1-8 year	180-580 gms
7.	Squamcus cell carcinoma	12 (11.52)	6 month – 10 year	50 gms – 530 gms
8.	Basal cell carcinoma	6 (5.50)	8 month – 6 year	50 – 128 gms
9.	Mixed tumour	1 (0.96)	10 year	20 gm.
10.	Rhabddo lympho sarcoma	3 (2.88)	6 – 10 year	25 – 35 gms
11.	Veneral granuloma	15 (13.76)	1 year – 12 year	50 – 225 gms.
12.	Lympho sarcoma	6 (5.76)	1.5 year – 6 year	80 – 1.2 kg.
13.	Fibrosarcoma	10 (9.60)	1 – 9 year	35 – 1.25 kg.
14.	Adenocarcinoma	4 (3.67)	8 month – 9 year	100 – 650 gms

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