Haryana Vet. **45** (December, 2006), pp 79-81

Short Communication

OCCURRENCE OF TUMOURS IN DOMESTIC ANIMALS

K. K. JAKHAR[1], P. SINGH[2] and KAPIL DEV[2]
Teaching Veterinary Clinical Service Complex, College of Veterinary Sciences
CCS Haryana Agricultural University, Hisar-125 004

SUMMARY

Ninety-nine tumors were recorded in different species of animals during 2001-2004. Buffaloes had higher occurrence of tumour (39.39%) followed by dogs (36.36%), cows (16.16%) and horses (8.08%). Squamous cell carcinoma was the most commonly observed (27.27%) followed by fibroma (18.18%), venereal tumour (13.13%), melanoma (11.11%), fibrosarcoma (9.09%), adenoma (7.07%), ameloblastoma and basal cell carcinoma (3.03%) and lipoma (2.02%). The occurrence of myxoma, myxosarcoma, sebaceous epithelioma, haemangiopericytoma in buffaloes, and haemangioma and seminoma in dogs was 1.01% and were rarely recorded tumours. Of the 99 tumours, anatomical location wise, horn had the highest occurrence (17) followed by limbs and genital organs (16 each), head/jaw (15), neck (8), eye, udder and neck (7 each), brisket (3) and rectum, spleen and nose (each). The occurrence was more in females of buffalo, dog and horse while in cattle, it was more in males. Overall, females (65.6%) were affected more than males (34.34%). The occurrence was more in buffaloes, cattle and dogs 3-5 years while it was more in horses of 5-8 years age.

Key words: Occurrence, tumours, cattle, buffalo, dog, horse

Studies relating to the incidence of neoplasms are scanty in India and abroad (Singh and Singh, 1984, Bhowmik and Nandi, 1986, Degloorkar and Moregaonkar, 1994, Sivakumar *et al.*, 2004). In the present communication, the occurrence of tumors, their types and distribution in different species of animals referred to Teaching Veterinary Clinical Service Complex (TVCSC) during the period of four years (2001-2004) has been documented.

Ninety-nine cases suspected for tumor growth recorded in various species (buffalo, cattle, dog and horse) of animals at TVCSC Hisar during 2001-2004 formed the material for the present study. Biopsies were collected in 10% formalin and tissues were processed for routine histopathological examination by staining with haematoxylin and eosin (Luna, 1968).

SPECIES-WISE DISTRIBUTION

The occurrence of tumours (Table 1) was more in buffaloes (39.39%) followed by dogs (36.36%), cattle (16.16%) and horses (8.08%). More occurrence in buffalos, dogs and cattle could be attributed to their population. Low population of equines could be the reason for small number of tumor cases as also reported by Sivakumar *et al.* (2004).

Squamous cell carcinoma was frequent in buffaloes (11) followed by cattle (9), horses (4) and dogs (3). Almost similar trend was observed for fibroma in different species of animals. Venereal granuloma cases were seen exclusively in dogs. Fibrosarcoma was observed in buffaloes and dogs (4 cases each) followed by cattle (1) and no case was seen in horse. Melanoma was more frequent in buffaloes (6) followed by dogs (4). Higher incidence of tumours (squamous cell carcinoma, fibroma, fibrosarcoma and melanoma) reported in cattle than buffaloes (Bhowmik and Nandi, 1986, Singh *et al.*, 1991) is in contradiction to the present report.

ANATOMICAL REGION-WISE DISTRIBUTION

Out of total 27 cases of squamous cell carcinoma, the anatomical sites were horn (17),

[1] Corresponding author
[2] Department of Vety. Surgery and Radiology, CCS HAU, Hisar

Table 1
Occurrence of tumours in different animals with respect to species and sex

Tumour Type	Buffalo		Cattle		Dog		Horse		Total
	M	F	M	F	M	F	M	F	
Fibroma	2	5	3	2	1	2	2	1	18 (18.18)*
Fibrosarcoma	-	4	-	1	1	3.	-	-	9 (9.09)
Melanoma	2	4	-	1	1	3	-	-	11 (11.11)
Squamous cell carcinoma	8	3	7	2	1	2	1	3	27 (27.27)
Venereal tumour	-	-	-	-	4	9	-	-	13 (13.13)
Adenoma	-	3	-	-	-	3	-	1	7 (7.07)
Basal cell carcinoma	-	1	-	-	-	2	-	-	3 (3.03)
Lipoma	-	1	-	-	-	1	-	-	2 (2.02)
Myxoma	-	1	-	-	-	-	-	-	1 (1.01)
Myxosarcoma	-	1	-	-	-	-	-	-	1 (1.01)
Ameloblastoma	-	2	-	-	-	1	-	-	3 (3.03)
Sebaceous-epithelioma	-	1	-	-	-	-	-	-	1 (1.01)
Haemangiopericytoma	-	1	-	-	-	-	-	-	1 (1.01)
Haemangioma	-	-	-	-	1	-	-	-	1 (1.01)
Seminoma	-	-	-	-	1	-	-	-	1 (1.01)
Sex-wise total	12	27	10	6	10	26	3	5	99
Species-wise total	**39 (39.39)**		**16 (16.16)**		**36 (36.36)**		**8 (8.08)**		**99**

*Figure in parenthesis indicates percentage

head and jaw (4), trunk (3), genital organs (2) and nose (1). The results are in agreement with the earlier reports (Bhowmik and Nandi, 1986, Singh *et al.* 1991). Seven cases of fibroma were recorded from limbs followed by head and jaw (5), neck (3) and one each in trunk, rectum, and brisket region. Almost similar trend was noticed by Singh *et al.* (1991). All the 13 cases of venereal tumours were recorded from genital organs of bitch which is in agreement with earlier reports of Singh *et al.* (1991). Of the 11 cases of melanoma, occurrence was more in eyes (5), followed by limbs (3), trunk (2) and neck (1). Moulton (1990) also reported such tumours in skin of dog and perineum/root of tail in horses. Six cases of adenoma were observed from udder and one case was from eye region. Adenoma was reported more frequently from perianal glands followed by intestine, pancreas and prostrate in cattle (Bhowmik and Nandi, 1986).

Fibrosarcoma was recorded in nine cases and the most common sites were limbs (4), neck (3) and one each in brisket, head and jaw region. Moulton (1990) observed skin and subcutis of trunk and extremities, the oral cavity and nasal cavity as the most common site of fibrosarcoma in dog. Basal cell carcinoma (3 cases) was seen in neck, head and jaw, and eye region of body. Moulton (1990) described skin of head and neck of dogs as the most common sites of this tumor. All the three cases of ameloblastoma were observed in head and jaw region and the results were in agreement with those reported by Singh *et al.* (1991).

Lipoma was recorded in buffalo and dog in the present study on udder and teat (1) and limbs (1). The results were in agreement to Singh *et al.* (1991). However, Bhowmik and Nandi (1986) and Moulton (1990) reported lipoma from abdominal subcutis of dogs and mesentery in buffaloes, dogs, horses and cattle. One case each of myxoma and myxosarcoma was observed in buffaloes from head/jaw and trunk regions, respectively. Sebaceous epithelioma and haemangiopericytoma were evidenced in buffaloes as rare tumours affecting limbs and trunk regions, respectively. One case each of seminoma and haemangioma of spleen was also observed in dog. All these tumours appeared to be rare in occurrence.

AGE-WISE DISTRIBUTION

In buffaloes, the occurrence was more in animals of 3-5 years age group (22) followed 0-3 years age group (10), 5-8 years age group

Table 2
Age and sex wise distribution of tumours in different species of animals

Age group (yrs)	Buffalo		Cattle		Dog		Horse		Total
	M	F	M	F	M	F	M	F	
0-3	3	7	3	1	3	6	-	-	23
3-5	7	15	5	4	3	12	1	1	48
5-8	1	4	1	1	8	6	2	2	19
8-10	1	1	1	-	1	3	-	2	9
Total	12	27	10	6	9	27	3	5	99

M- male, F- female

(5) and minimum (2) in 8-10 years age group (Table 2). In cattle and dogs, almost similar trend was observed. Moulton (1990) reported increased frequency of benign and malignant tumours with age in dogs and cats. Singh *et al.* (1991) reported majority of tumours in 4-8 years of age group in cattle, buffalo, horse, dog and camel. However, the occurrence of tumours in horses in the present study was more in 5-8 years age group (4 out of 8) followed by 3-5 years (2) and 8-10 years (2).

SEX-WISE DISTRIBUTION

More number of female animals (Tables 1 and 2) were affected (65.65%) than males (34.34%). In buffaloes, 27 of the 39 cases were in females (66.67%) and the rest in males 12 (33.33%). A similar trend was observed in dogs with 27 cases in females and 9 in males. In equines, there were five cases in females and 3 in males. Sivakumar *et al.* (2004) reported higher percentage of tumours in male dogs than female. However, in the present study, the occurrence in cattle was higher in males (10/16) than females (6/16). Incidence of squamous cell carcinoma was higher in bullock (7) and buffalo bullock (8) than females (cow, 2 and buffalo, 3). In general, occurrence of tumours was higher in female than male of respective species except that of fibroma, which was marginally higher in bullock and horses than cow and mare, respectively. Rare tumours like seminoma and haemangioma were also recorded only in male dogs. Regarding venereal tumour, the occurrence was 30.76% (4 cases) in dogs while it was 69.24% (9 of the 13 cases) in bitch. There seems to be predisposition of bitches than dogs to this tumour. However, earlier reports of Brdey *et al.* (1983) and Sivakumar *et al.* (2004) are in contradiction to the present findings but it agrees to findings of Singh *et al.* (1991).

REFERENCES

Bhowmik, M.K. and Nandi, S.N. (1986). The incidence of bovine neoplasms in West Bengal. *Indian Vet. J.* **63**: 271-274.

Brdey, R.S., Goldschmidt, M.M. and Roszel, J.R. (1983). Canine mammary gland neoplasia. *J. Am. Anim. Hosp. Assoc.* **19**: 61-66.

Degloorkar, N.M. and Moregaonkar, S.D. (1994). Neoplasms in domestic animals at Parbhani. *Indian J. Vet. Pathol.* **16**: 106-107.

Luna, L.G. (1968). Manual of Histological Staining Methods of the Armed Forces Institute of Pathology. (3rd edn). McGraw Hill Book Company, New York.

Moulton, J.E. (1990). Tumours in Domestic Animals (3rd edn). University of California press, London, pp. 13, 25, 31, 60, 77.

Singh, B. and Singh, N. (1984). Neoplams in Indian buffaloes. *Indian Vet. J.* **61**: 639-643.

Singh, P., Singh, K., Sharma, D.K., Behl, S.M. and Chandna, I.S. (1991). A survey of tumours in domestic animals. *Indian Vet. J.* **68**: 721-725.

Sivakumar, S., Pawde, A.M., Singh, G.R., Gupta, Charan, K. and Tandon, S.K. (2004). Occurrence of neoplasms in domestic animals. *Indian J. Vet. Pathol.* **28**: 70-72.