PATHOLOGICAL AND HAEMATO-BIOCHEMICAL STUDIES OF LEIOMYOSARCOMAS IN DOGS

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ABSTRACT

The dog has claimed unfathomable affection from man for varied reasons. It's in human life as it may act as a companion, guard, hunter, drought in icy regions and a guide to blind persons. Leiomyosarcoma is an uncommon cancerous tumour, which, in this case, arises from the smooth muscles of the stomach and intestines. This condition was recorded in overall 2.63 (4/152) per cent cases. Grossly, these tumours were very large in size, round or ovoid, well circumscribed. Microscopically, leiomyosarcomas were more cellular and the cells were less differentiated having hyperchromatic nuclei. Connective tissue stroma generally present and fibrous septa divide the tumour into lobules.

Key words: Histopathology, leiomyosarcomas**,** dog

Introduction

The dog has claimed unfathomable affection from man for varied reasons. It's in human life as it may act as a companion, guard, hunter, drought in icy regions and a guide to blind persons. The dog happens to be a reliable aid in detecting narcotics and explosives. A neoplastic proliferation is an abnormal, non-inflammatory anomalous new growth of tissues which develops uncoordinated and in a haphazard manner as a result of some unusual stimulus and which not only does not serve any useful purposes, but in fact does harm to the body, the degree of which various according to the nature of neoplasm. Leiomyosarcoma is an uncommon cancerous tumour, which, in this case, arises from the smooth muscles of the stomach and intestines.

Materials and Methods

For the present study 152 neoplastic tissue samples of dogs of either sex, different age groups and breeds reported to various clinics at Bikaner, Jaipur, Udaipur, Ajmer and Jodhpur districts and adjacent areas were taken for the present study. Apart from this, specimens submitted to the Department of Veterinary Pathology, College of Veterinary and Animal science, Bikaner for routine post-mortem examination and biopsies for histopathological examination were also included.

The tissue specimens were collected and preserved in 10 per cent formal saline and were processed mechanically for paraffin embedding by acetone and benzene technique (Lillie, 1965) and stained with haematoxylin and eosin method of staining as a routine. For haematology, blood samples were subjected for examination of haemoglobin, packed cell volume, total erythrocyte count, total leukocyte count, differential leucocytes count MCV and MCHC as per the methods described by Jain (1986).

Results and Discussion

This condition was overall recorded in 2.63 (4/152) per cent cases and 50.00 (4/8) percent in cases reported for tumour of muscle and cartilage.

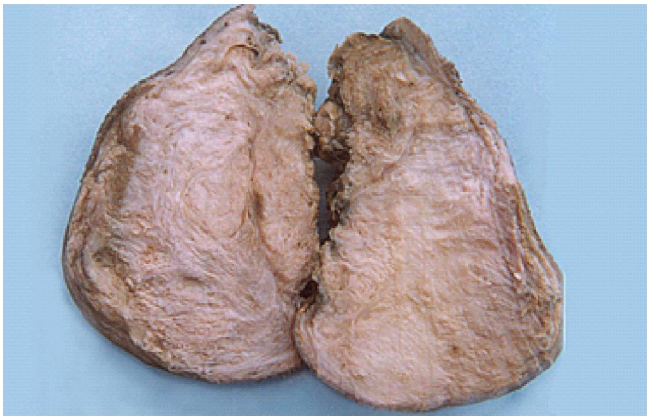

Fig.1: Circumscribed ovoid, fleshy, encapsulated growth of greyish-white colour

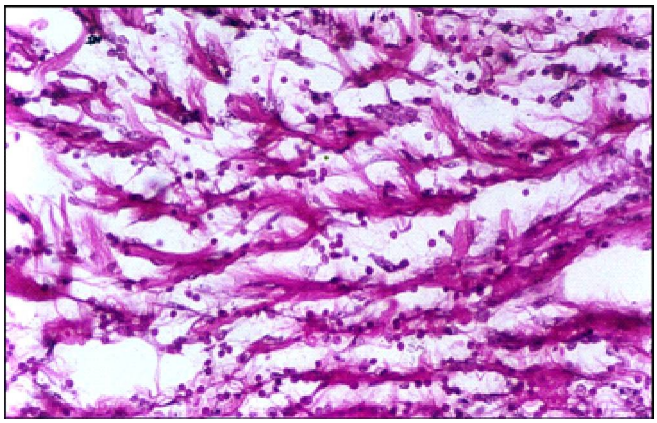

Fig. 2: Cellularity and the cells were less differentiated having hyperchromatic nuclei (H&E-200X)

Grossly, these tumours were very large in size, round or ovoid, well circumscribed and may or may not be encapsulated. They were generally lobulated, fleshy or fibrous, greyish, white or pink coloured and sometimes multicystic (Fig. 1).

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Table 1: Alteration in haematological values of dog in leiomyosarcoma

Conditions	Hb (g%)	TEC Milli/cmm	TLC Th/cmm	N (%)	E (%)	B (%)	L (%)	M (%)	PCV (%)	MCV cuμ	MCHC (%)
Leiomyosarcoma	14.36 ±0.21	7.06 ±0.08	7.8 ±0.11	65 ±1.15	2.33 ±0.33	0.33 ±0.33	28.66 ±0.88	3.66 ±0.33	43 ±0.57	60.85 ±0.92	33.40 ±0.194

Table 2: Alteration in biochemical values of dog in leiomyosarcoma.

Conditions	Blood glucose mg%	Serum total protein concentration mg%	Serum albumin concentration mg%	Serum immune globulins mg%	A : G ratio	Minerals estimation	Plasma alkaline phosphates IU/L	Serum creatinine mg%
Lipoma	71.7 ± 0.866	7.03 ±0.28	3.55 ±0.28	3.48 ± 0.05	0.99 ± 0.09	12.53 ±0.54	4.7 ±0.20	122 ±1.52

Microscopically, leiomyosarcomas were more cellular and the cells were less differentiated having hyperchromatic nuclei. Connective tissue stroma generally present and fibrous septa divide the tumour into lobules (Fig. 2). Almost similar observations were also described by Moulton (1978) and Brodey and Roszel (1967).

Mean±S.E. values recorded for haemoglobin, TEC, TLC, DLC, PCV, MCV, MCHC, and haematobiochemical parameters and biochemical parameters for leiomyosarcoma did not reveal any appreciable effect and the values were more or less in close agreement with values recorded for healthy dogs (Table 1 and 2).

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