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# Pathological Study of Rare Case of Duodenal Leiomyosarcoma in a Labrador Dog

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**ABSTRACT:** The leiomyosarcoma is a tumor of mesenchymal origin of smooth, malignant, slow-growing muscles. The present study reports a case of duodenal leiomyosarcoma in Labrador dog. A 6 year old black female Labrador dog with history off feed, vomition and melena brought for necropsy examination. Gross lesions revealed tennis ball size tumorus mass at the initial portion of duodenum resulting into the obstruction of intestinal lumen. Microscopically, duodenum with tumours mass revealed smooth muscle bundles arranged in all the directions having elongated blunt ended nuclei along with numerous blood vessels and mitotic figure which is indicative of leiomyosarcoma.

KEYWORD: Leiomyosarcoma, Labrador, Pathology.

#### INTRODUCTION

Leiomyosarcoma is a malignant, slow-growing, locally invasive tumor originating from the smooth muscle cells of hollow organs. The digestive muscles along the walls of the stomach and intestine is the most common place, but it can also sometimes be found in the urinary bladder, uterus and vagina of female dogs.

Leiomyosarcoma are uncommon in dogs [1, 2] and occur in less than 1% of all tumors of the species. The highest occurrence age is 9 to 12 years, with a higher risk of male dogs from large breeds [3]. Clinical signs depend on the nature and location of the tumor, which may cause obstruction of the gastric flow, ulceration and result in melena, anemia and lethargy [1, 4]. The objective of this study is to report a case of anemia associated with duodenal leiomyosarcoma in a Labrador.

#### MATERIALS AND METHODS

A 6 year old black female Labrador dog belonging to dog squad, CISF, Nagpur, Maharashtra was brought to the Department of Veterinary Pathology, Nagpur Veterinary College for detailed necropsy examination. History consisted of off feed, vomition and melena and clinical findings of low hemoglobin, TEC and PCV. Necropsy was conducted and gross lesions were recorded. Tissue samples of tumorus mass attached to initial portion of duodenum, duodenum, liver and kidney were collected in 10 % buffered formalin and processed for histopathological examination by paraffin embedding technique. Sections were cut at 4-5 µ thickness and stained with routine haematoxylin and eosin (H & E) staining [5].

#### **RESULTS AND DISCUSSION**

In the present case, clinical symptoms of off feed, weight loss, vomition, anemia and melena were noticed. The main clinical manifestations of gastrointestinal tumors are vomition, melena, weight loss and anorexia which results due to leiomyosarcoma located at gastric body and pylorus [2].

On external examination, severely pale mucous membrane and blood mixed faeces at anal region were noticed. Necropsy examination revealed tennis ball size tumorus mass (6.7 x4.5 cm) at the initial portion of duodenum resulting into the obstruction of intestinal lumen (Fig.1). Tumour mass cavitate on the surface of duodenum (Fig. 2). The entire small intestines showed massive hemorrhages, blood clots and blood mixed faeces (Fig.3). The large intestine was filled with massive blood mixed faeces. The gastric mucosa was thickened with blood mixed food material. The visceral organs *viz*; lungs, spleen, liver and kidneys were severely pale in colour. These findings are in agreement with previous researcher [6].

Microscopically, the part of the duodenum with tumours mass revealed smooth muscle bundles arranged in all the directions having elongated blunt ended nuclei. (Fig.4 & 5). The bundles are separated by fibrous tissue. Muscle fibers are spindle shape along with numerous blood vessels and mitotic figures in the section which is indicative of leiomyosarcoma.

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Further, the intestine showed severe vacuolar degenerative changes in the epithelial cells of villi of small and large intestine (Fig.6). Severe vacuolar degenerative changes were noticed in liver, kidney and heart due to hypoxia which resulted because of internal hemorrhages as a result of leiomyosarcoma. These histopathological lesions are in agreement with the researchers [7, 8].

#### CONCLUSION

Due to the rare occurrence of this neoplasm in stomach regions, histopathological examination is essential for diagnosis of duodenal leiomyosarcoma. Necropsy and histopathological examination confirmed the case of duodenal leiomyosarcoma in dog.

#### **Contribution of authors**

The authors contributed equally.

#### **Conflict of interest**

There is no conflict of interest.

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Fig 1: Duodenum: showing tumorus mass at the initial portion. 2: Tumour mass cavitate on the surface of duodenum. 3: Intestine filled with blood mixed faeces.

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**Fig 4: Duodenum:** Tumorus mass of smooth muscle bundles arranged in all the directions (H & E, 100x). **5:** Tumorus mass showing spindle cells with elongated, blunt ended nuclei, arrange in all direction with fibrous tissue proliferation (H & E, 200x). **6:** Duodenum showing vacuolar degenerative changes in epithelial cells (H & E, 100x).

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