

# HEMANGIOSARCOMA IN A DOG - A CASE REPORT

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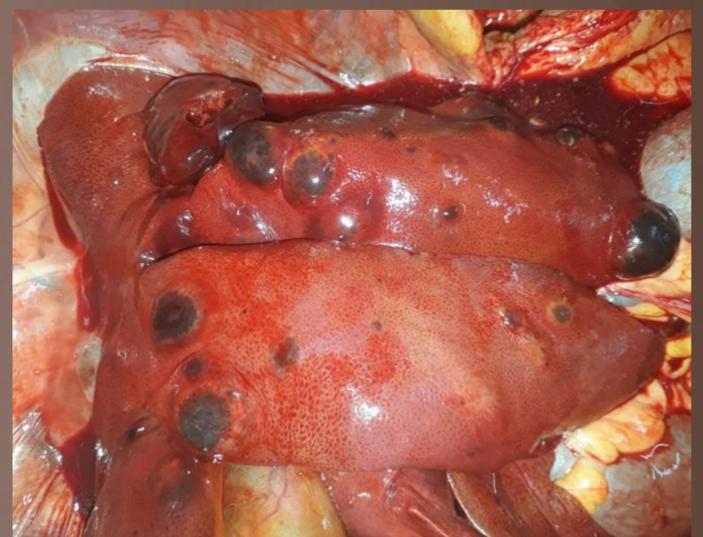
## INTRODUCTION

Hemangiosarcoma, also known as malignant hemangioendothelioma or angiosarcoma, is a malignant tumor that originates from the endothelium of blood vessels (Scott, 1988). The most common localization of hemangiosarcoma in the dog is the spleen, although neoplasms can be ubiquitous. They can be single and multifocal with different sizes. Their colors range from light gray, red to purple, with a soft to gelatinous texture. Tumors are poorly constrained, not encapsulated and often ulcerated. They are fragile and complications associated with tearing and bleeding are common. Hemangiosarcoma in the dog (except in the skin form) have aggressive biological behavior, grow rapidly and metastasize. Metastases are most commonly observed in the liver, omentum, diaphragm, pancreas and lungs (Scott, 1988; Hargis et al., 1992; Ward et al., 1994; Withrow and MacEwen, 1996; Warren and Summers, 2007; Meuten, 2017).



## CASE HISTORY

The patient was a 10-year-old male Labrador, weighing approximately 35 kg. The animal died during a medical check-up at the Small Animal Clinic, Faculty of Veterinary Medicine, Trakia University, Stara Zagora. At the request of the owner, an autopsy was performed to clarify the cause of death. The *macroscopic examination* of the corpse revealed pale mucous membranes of the conjunctiva and the oral cavity. In a section of the abdominal cavity, the spleen was enlarged, with multiple neoplastic formations. The liver was light brown in color, with numerous nodular formations of 1-3 cm in size. The blood vessels of the small and large intestines were hyperemic, and the mesenteric lymph nodes were enlarged. The medullary part of the kidneys was intensely hyperemic and the lungs were dark red in color, dense and streaked with numerous pea-sized nodules. In the section of the trachea and bronchi there was an abundance of foamy fluid. The pericardium of the heart was filled with about 200 ml of blood, and a dark red formation measuring 1 - 2 cm in diameter was observed on the right atrium. There were no visible changes in other organs and systems. The *pathohistological changes* in the organs examined (heart, liver, spleen, lung) revealed degenerative necrobiotic processes and neoplastic growths. The neoplastic parenchyma consisted of dense and more intensely stained regions, which consisted of endothelial-like cells, forming small capillary structures filled with erythrocytes. The stroma was a lighter colored area made up of fibrous connective tissue. The registered pathohistological changes in the examined organs gave us reason to make the final diagnosis - hemangiosarcoma.



## DISCUSSION

The clinical signs of hemangiosarcoma depend on the location of the primary tumor and can range from weakness, asymptomatic pain in the abdomen to sudden death (bleeding due to tearing of the neoplastic tissue) (Hristov et al., 2007). Often, clinical examination of patients with visceral neoplasms observe pale mucosal membranes and increase time to capillary blood flow, tachycardia, and low heart rate. In dogs with tumors of the heart, cardiac tone suppression, paradoxical pulse and right ventricular failure can be detected (Simeonova et al., 2006). Visceral forms of illness include lethargy, anorexia, vomiting, collapse, and difficulty breathing. Anemia and accumulation of pleural or peritoneal fluid may also be detected. Thrombocytopenia is observed in 75-97% of cases (Simeonov, 2019; Simeonov, 2012). Most animals have coagulation disorders. Many patients with visceral neoplasia have ascites, which can obscure the true finding. Animals with cardiac neoplasia have abnormalities in the electrocardiogram. Final diagnosis requires pathohistological verification. In conclusion, the early diagnosis of visceral hemangiosarcoma in the dog is problematic. Metastases are usually detected late and most patients die before showing specific signs (as in the case). In other animals, tearing of the neoplastic masses may be possible, accompanied by profuse bleeding during their clinical examination. Unfortunately, in most cases the diagnosis is postmortem.

