

General introduction

Endothelial cell (EC)-derived tumors range from benign hemangioma (HA) to aggressive malignant metastatic ones, which respond poorly to current treatments and have a very high mortality rate [1]. Canine hemangiosarcoma (HSA) is among the most challenging and mysterious diseases encountered in veterinary practice. It is an incurable malignant mesenchymal tumor arising from vascular ECs [2] and occurs more frequently in dogs than in any other species, with an incidence between 0.3 and 1.98% [3]. The first reports of canine HSA in the literature are dating to the middle of the nineteenth century [4-7]. It has been reported that there is a breed-associated risk for development of hematopoietic neoplasms, including HSA [8]. Breeds that represented the highest risk included Boxers, Basset hounds, and St. Bernards. Scottish terriers, Bulldogs, Airedales, Weimaraners, golden retrievers, Doberman pinschers, Labrador retrievers, English setters, and Great Danes were among other breeds at risk [9-11].

HSA can develop in any tissue or organ containing vascular structures, although the most frequently reported primary locations in dogs are the spleen (28–63%), right atrium and auricle of the heart (3–50%), skin or subcutaneous tissues (23.9%), and the liver [10, 11]. Visceral HSAs especially splenic ones are much more common than cutaneous HSAs, and they are associated with extremely poorer prognosis [12]. Histologically, the neoplasms are cellular with moderate to extensive areas of hemorrhage and necrosis. The main distinction feature is that neoplastic cells are observed lining irregular vascular spaces (capillaries or sinusoids) filled with blood [13]. They can have capillary, cavernous or solid appearance.