

Immunohistochemical Characterization of Hemangiosarcoma in Dogs

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SUMMARY

The hemangiosarcoma (angiosarcoma, malignant hemangioendothelioma) is the malignant tumor of the endothelial cells, occurring frequently in dogs and rarely in cats, horses, cows, and sheep (Jubb 2007), having like primary sites especially the spleen, skin, right atrium, lungs and liver (Brown1985, Robinson,1993). Because of the nonspecific signs and highly methastatic profile the tumors have a poor prognosis when they are diagnosed. Histologically, the hemangiosarcoma consists of vascular spaces delimited by anaplastic, elongated, endothelial cells. The vascular spaces contain erythrocytes in variable numbers or thrombi and are delimited by single or multiple layers of immature, polymorphic endothelial cells. The solid areas of some tumors are presented in small sizes, irregular vascular spaces lined by a single layer of pleomorphic plump, shaped young endothelial cells with irregular vascular spaces. In the cases in which these characteristics are minimal, immunohistochemistry for CD31/PECAM (platelet endothelial cell adhesion molecule) or for the VIII factor related antigen (von Willebrand factor) can be used to demonstrate the endothelial derivation and to give an important argument for the further diagnosis of hemangiosarcoma.

In this study we aimed to immunohistochemical characterize all the tumors that were brought to our department in the last 3 years and that histologically resembled to the characteristics of the hemangiosarcoma. The immunohistochemical staining for CD 31 (rabbit polyclonal to CD31-ab28364) was performed on formalin-fixed paraffin-embedded tissues using a streptavidin biotin peroxidase complex method. The immunologic reaction was demonstrated using a 0.05% diaminobenzidine tetrahydrochloride in imidazole buffer. The sections were counterstained with Harris's hematoxylin.

From ten tumor cases that were analyzed, in 8 of them we found through immunohistochemistry, an expression of CD 31 antigen at the neoplastic cells. In two tumors that were histologically alike to the characteristics of the hemangiosarcoma, no expression of PECAM was found. Even in these cases the hemangiosarcoma is not excluded, for a certain diagnostic, future immunological characterization of von Willebrand factor and Vimentine is needed.

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