

# Hemangiosarcoma

## Definition

Hemangiosarcoma is a malignant tumor originating from blood vessels. These tumors usually occur in the skin, soft tissues, spleen or liver. The most common site is the spleen. They develop more frequently in the dog than in any other species. Dogs with hemangiosarcoma are usually older (six to thirteen years of age), although it has been seen in dogs less than one year of age. Although this tumor can develop in many locations, the most common site is the spleen. It is a highly metastatic tumor and virtually all dogs affected with it will develop metastases within six months of diagnosis. It most often metastasizes to the brain, but can also spread to the lungs, liver, spleen, heart, kidneys, skeletal muscle and bone. On biopsy, hemangiosarcomas are variable in size and appear pale gray to dark red in color. They are nodular and soft to touch. They may contain areas of previous hemorrhage and necrosis. They are poorly-formed, non-encapsulated and often they adhere to adjacent organs.

## Clinical Signs

Hemangiosarcomas usually develop in an internal organ and early symptoms are difficult to recognize. Most dog owners realize a problem is present only after the dogs exhibits the following symptoms: weakness, tires easily, "slows down" all of

a sudden. Dogs may even collapse as an initial indication of disease. In addition, the abdomen may be slightly to grossly distended with fluid. The dog may have previously had intermittent episodes of weakness or collapse, often with spontaneous recovery within 12-14 hours. Usually these incidents are associated with hemorrhage due to rupture of the tumor-affected blood vessel with resultant bleeding into the abdominal cavity. Upon examination, the gums and tongue may appear pale. Other presenting signs are related to the specific organ of involvement and the dog may exhibit lameness, seizures, or abnormal heart rhythms.

## Diagnosis

Upon suspicion of hemangiosarcoma, the veterinarian will perform a physical examination of the dog. This will include looking at the mucous membranes for signs of anemia (pale gums). It is also important to provide the veterinarian with an accurate history of the dog's recent activities and behaviors. Work-up includes a complete blood count, chemistry panel, urinalysis and radiographs of the chest and abdomen. If available, ECG plus cardiac and abdominal ultrasound are very helpful. Diagnosis is accomplished by biopsy or removal of the tumor. This can be difficult because there may be multiple tumors present, the primary tumor site may prove challenging to determine, and there is great risk of severe hemorrhage.

## Treatment

Treatment includes surgical removal of the primary tumor followed by chemotherapy. Various chemotherapy protocols exist which may include several drugs given in an exact order, including cyclophosphamide, vincristine, doxorubicin and cytoxan.

## Prognosis

Long-term prognosis of dogs with hemangiosarcoma is poor. Studies have shown that surgery alone, usually a splenectomy, offers a median survival time of 19-83 days. Dogs who have a primary tumor of the spleen without rupture of the blood vessel have a better prognosis. If the splenic tumor has ruptured, the prognosis is poorer. A combination of splenectomy and chemotherapy can increase survival time, but even with both of these treatments, less than 10% will survive a year or longer.

## References

Dorland. Dorland's medical dictionary, 28th ed. 1994.

Withrow, S., MacEwen, G. Small animal oncology, 2nd ed. 1996.

Copyright © 1999, Flat-Coated Retriever Society of America, Inc.

Last Revised: December 28, 1998 (Reprinted with permission from the health manual of the FCRSA)