



# HEMANGIOSARCOMA IN DOGS

## INTRODUCTION

Hemangiosarcomas (HSA) are malignant tumors derived from the cells lining blood vessels (*hem = blood, angio = vessel, sarcoma = tumor*). Although very rare in humans, HSA are considerably more common in dogs. Since blood vessels occur throughout the body, HSA can occur anywhere in the body as well. However, the most common sites are the skin, spleen, liver, and heart. Most HSA (except some appearing in the skin) are both locally aggressive and have a high likelihood of spreading to other parts of the body. These tumors are typically filled with blood, and very fragile. Dogs with HSA occurring inside the body may have signs related to blood loss into the abdomen or into the space around the heart, resulting in weakness, lethargy, pale gums, etc. Dogs with cutaneous HSA may simply have a mass in or under the skin. Some of these cutaneous tumors may occur in light-skinned dogs as a result of sun exposure.

## DIAGNOSIS AND STAGING

Dogs presenting with evidence of tumor rupture into the abdomen will often be taken to surgery on an urgent basis. Prior to surgery, it is important to perform blood tests to evaluate blood cell numbers, blood clotting ability and organ function, and X-rays of the chest and ultrasound of the abdomen will be performed as well. These tests are performed to insure that it will be safe to perform anesthesia and surgery, and that there is no evidence of spread that is large enough to see. (Dogs with visible spread may not benefit from surgery.) Some dogs with HSA may require supportive care such as fluid therapy or blood transfusions prior to surgery, and some dogs with HSA of the spleen may have problems related to irregular heart rhythm at the time of surgery, that could require treatment as well.

## TREATMENT AND PROGNOSIS

The majority of dogs with HSA arising from a location other than the skin will develop problems related to tumor spread (metastasis) in the future. This happens in an average of **1-3 months** if surgery only is performed, but metastasis may be delayed if chemotherapy is given after surgery. "Standard" chemotherapy typically consists of the drug doxorubicin (Adriamycin) given once every 2 weeks for a total of five treatments. Chemotherapy is generally very well tolerated, with some dogs experiencing mild side effects that usually go away by themselves. Less than 5% of dogs experience severe side effects that would require hospitalization and supportive care. Should unpleasant side effects be noted, future doses of chemotherapy are reduced to decrease the likelihood of additional side effects occurring (See the handout CHEMOTHERAPY IN PETS for more information). Following the completion of chemotherapy, regular rechecks are recommended. Despite these treatments, the long-term prognosis for dogs with HSA is generally poor. Average survival times with surgery and chemotherapy are approximately 5-7 months, with only 10% of dogs surviving for one year. Dogs with the subcutaneous (under the skin) form of HSA may do somewhat better than this average.

Although there have been no studies evaluating their effectiveness, we will often offer therapies for HSA that have not been as thoroughly evaluated, but might have the potential to be more effective than the currently used chemotherapy. We are currently evaluating the effectiveness of another chemotherapy drug called **carboplatin**, which is given as a quick injection into a vein once every 3 weeks for a total of 4 treatments. Additionally, we currently have a **clinical trial** ongoing for dogs with HSA of the spleen.

Dogs with HSA of the skin surface may have a better prognosis after surgery – This depends on the appearance of the tumor under the microscope, and whether or not the entire tumor can be removed with surgery. Some dogs with HSA of the skin can be treated effectively and remain cancer-free for a long period of time with surgery alone, while others do have the potential to metastasize.