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HEMANGIOSARCOMA

Hemangiosarcoma is an aggressive cancer that arises from blood vessels. The cancer can be found anywhere in the body (because blood vessels occur throughout the body).

Hemangiosarcoma is most commonly found in the spleen, liver and heart. Prognosis is determined by the location of the disease. Although any breed of dog can develop hemangiosarcoma, certain breeds of dogs appear to be at higher risk, such as the German Shepherd, English Setter and Golden Retriever. We do not know what triggers the growth of this type of cancer.

Symptoms

Symptoms of hemangiosarcoma are usually determined by the location of the disease. Many dogs with the cancer in an internal organ show signs of intermittent or persistent weakness or even collapse. Because the cancer is producing abnormal blood vessels, these vessels tend to be very weak and prone to leaking. Further growth leads to rupture of one of these cancerous vessels, resulting in loss of blood. As the spleen is the internal organ most commonly affected by this cancer and is an organ that filters the blood, rupture can lead to blood loss into the abdomen. Rapid loss of blood causes weakness or collapse. If only a small amount of blood is lost, the episode of weakness can be temporary, as that blood can be reabsorbed into the body. If a large amount of blood is lost, the weakness is so profound that the dog may collapse. This is an emergency situation. Distention of the belly may be observed because of the large volume of free blood in the abdominal cavity. If the cancer is in the heart, this bleeding occurs into the sac that surrounds the heart, resulting in a compromise of the heart's ability to pump blood effectively. This can cause weakness and potential collapse.

Metastasis

A further problem exists when the cancerous blood vessel ruptures. The release of blood into a body cavity carries cancer cells with it, resulting in coating the cavity with cancer cells. This, along with the ease with which cancer cells break off from the abnormal blood vessels and thus gain access to the rest of the body throughout the bloodstream, results in rapid dissemination of cancer throughout the body. This spread of cancer to distant sites is termed "metastasis". It is this widespread metastasis that makes hemangiosarcoma a difficult cancer to control. Often the cancer has metastasized before any clinical signs are evident. The lungs and liver are the common sites of metastasis.

Staging

When hemangiosarcoma is diagnosed (or suspected), a number of diagnostic tests will be performed to *stage* your dog's cancer. Staging includes a series of tests to determine how far the cancer has spread in a patient, allowing you to make informed decisions regarding treatment. Radiographs (x-rays) of the chest will be performed to evaluate the size of the heart and look for metastasis in the lungs. Ultrasound of the abdomen and/or the heart in search of metastasis may be done. A complete blood count, chemistry profile and urinalysis will be obtained to assess your dog's overall health status. We may also perform a coagulation blood panel to evaluate the ability of your dog's body to clot blood. Other tests may be recommended, depending on individual circumstances.

Treatment

Treatment for hemangiosarcoma consists of treating the local and metastatic disease. Surgery is often performed to remove the primary tumor. If the tumor is external (i.e. on a leg, skin) radiation may also be recommended to achieve local control. Chemotherapy and/or immunotherapy are utilized to target the metastatic disease.

Fortunately, chemotherapy in dogs and cats is very different from "chemo" on people. Because *our focus is on quality of life for our pets* we never want the treatment to be worse than the disease. This is not to say that some dogs may not have side effects caused by the chemotherapy, but in the few dogs that do show side effects, the signs are typically mild and temporary. Your veterinarian or cancer specialist will discuss possible side effects with you at greater length.

Recent evidence has revealed that antiangiogenic therapy using a combination of three oral medications may also improve survival time. This is called the **metronomic protocol**. Survival times were similar when comparing dogs that were treated with surgery and chemotherapy, and dogs treated with surgery and the metronomic protocol. Currently, combining chemotherapy and the metronomic protocol is hoped to achieve even longer survival times.

Prognosis

Unfortunately, hemangiosarcoma is not curable. Dogs with internal organ involvement that are treated with surgery alone live an average of 2-4 months. Dogs that do not have identifiable metastasis at the time of surgery and are treated with surgery and chemotherapy live an average of 6-10 months. Some dogs with demonstrable metastasis may also respond to chemotherapy, providing a prolonged quality of life compared with dogs that are not treated at all. Dogs with hemangiosarcoma in the subcutaneous tissues (just under the skin) have longer survival times. Reports range from 10 months to 2 years with surgery, radiation and chemotherapy.

New types of treatments are being investigated continuously in the hope to improve the response rate of dogs with this disease. Again, quality of life is always the goal, and this can often be achieved by working closely with your veterinary team.