Cutaneous Hemangiosarcoma

General Information

Hemangiosarcoma is a malignant, aggressive type of soft-tissue tumor that comes from the epithelial cells that line the walls of blood vessels. It is a fairly common cancer that affects 1.5 to 2.5 million of the some 72 million pet dogs in the U.S. today and accounts for 5-7% of all tumors seen in dogs. Hemangiosarcomas result when the mutated epithelial cells attempt to make new blood vessels. These new vessels are poorly formed or dead end, resulting in blood pooling within them and clotting to form a round, encapsulated, blood-filled mass. They are commonly seen on the head, ear tips, nose and lightly or non-pigmented skin, particularly on the ventral abdomen or inguinal areas.

There are several different types of hemangiosarcoma, dermal, subcutaneous and visceral. Of the three, dermal hemangiosarcoma is the most treatable and visceral is the most lethal. Dermal hemangiosarcomas are the more common of the two cutaneous hemangiosarcomas. They typically originate within the dermis of the skin and are largely contained to this layer. Subcutaneous hemangiosarcomas originate in the subcutaneous layer just beneath the skin. They tend to be less contained and more likely to metastasize. A visceral hemangiosarcoma is considered to be the most
aggressive form. Although it can start in any vital organ, it typically originates in the right atrium of the heart or the spleen, and metastasizes widely. Both forms of cutaneous hemangiosarcoma are considered to be less aggressive and have longer survival times than the visceral variation. It should be noted that visceral hemangiosarcoma metastasizes easily to skin and thus prognosis is worse for those patients where a cutaneous hemangiosarcoma is considered to be a metastasis of visceral hemangiosarcoma.

**Risk Factors**

Sun exposure seems to play a role in the development of hemangiosarcoma. Breeds with shorter coats and lighter colored skin like Pit Bulls, Dalmations and Boxers that spend a lot of time sunning themselves may be at increased risk for developing these tumors. However, it appears that the solar-induced variations of cutaneous hemangiosarcomas are less aggressive than those that are not solar-induced. Affected animals may develop multiple or recurrent tumors but they are less likely to metastasize. Although dogs of any age and breed can be affected, all types of hemangiosarcoma are more common in middle aged (6 years) or older dogs. Golden Retrievers, German Shepherds, Portuguese Water Dogs, Bernese Mountain Dogs, Pit Bulls, Whippets and Greyhounds may all be predisposed to developing the dermal type of this cancer. Conversely, those breeds that are not genetically predisposed or have
longer hair coats and dark skin are more likely to develop the subcutaneous or visceral hemangiosarcoma. Though these variations have less chance of recurrence, the chance of metastasis is greater and these animals typically have shorter survival times.

**Treatment**

Treatment varies based on the type of hemangiosarcoma present. Dermal hemangiosarcomas that are not solar-induced, relatively small and completely confined to the dermis may be removed by freezing the growth with liquid nitrogen, much like removing a wart. Surgical excision is preferred for lesions that are larger than 1 cm in diameter or cystic. Cutaneous hemangiosarcomas that are entirely confined to the dermis are unlikely to recur once removed. They should still be removed promptly as it’s estimated that 1/3 of all cutaneous hemangiosarcomas can spread internally. Subcutaneous hemangiosarcomas are known to reoccur following surgical excision and are more likely to invade surrounding tissues as well as metastasize compared to their dermal counterparts. If metastasis occurs, additional surgery and accompanying chemotherapy may be required.

**Prognosis**

Prognosis varies based on the type, grade and stage of hemangiosarcoma encountered, but is generally poor. Dogs diagnosed with dermal hemangiosarcoma
have the longest survival time of roughly 2 - 2.5 years. Dogs with solar-induced cutaneous hemangiosarcoma of either type may have a higher rate of recurrence (~77%) but typically have better survival times than other types of hemangiosarcoma. Dogs with cutaneous hemangiosarcomas that are metastases of visceral hemangiosarcoma have a very poor prognosis, with an expected survival time of several months.

**Comparative Aspects**

This cancer is almost exclusive to dogs. It has been reported in cats, particularly on the head or ears of older neutered males, but it makes up less than 2% of all cutaneous tumors diagnosed in cats. These tumors may appear in other domestic animals, but they do not appear to be as aggressive and are prone to recurrence rather than metastasis.

People can get a form of this cancer, known as angiosarcoma, following exposure to vinyl chloride and polychlorinated biphenyls found in workplaces like rubber and tire plants. It is relatively rare and accounts for only 1% of all tumors that occur in people.
References


