Canine Hemangiosarcoma

A PowerPage Presented By

Hemangiosarcoma (HSA) is a malignancy of endothelial cells that normally line blood vessels. It can develop anyplace in the body that has blood vessels but most commonly occurs in the spleen of dogs. Another form of the disease is the cutaneous form, which is induced by ultraviolet radiation from the sun. Because of the biological differences between the cutaneous and visceral forms of the disease, we will discuss each of them separately in this PowerPage.

Visceral and Subcutaneous Hemangiosarcoma

Key Points

- Most commonly affects large breed dogs such as **German Shepherd Dogs**, Golden Retrievers, Labrador Retrievers, etc
- Most commonly affected organ is the **spleen**
  - Other commonly affected organs include the **right atrium** (auricle), liver, retroperitoneal space, subcutaneous tissue
- The most common tumor to metastasize to the brain
- Often present through emergency for acute hemoabdomen and hypovolemic shock, or pericardial effusion and cardiogenic shock
  - May have history of "good days" and "bad days" associated with small bouts of internal hemorrhaging and re-absorption of the blood
- **Highly metastatic** via blood vessels and direct contact seeding within the abdomen if tumor ruptures
- Median survival times generally do not exceed 1 year, regardless of treatment

Diagnostics

Abdominal ultrasound

- HSA often appears cavitary and fluid-filled
- To identify free abdominal fluid, primary and metastatic lesions, especially in the liver, lymph nodes, and serosal surfaces

Fine needle aspirate cytology

- Often unrewarding as samples are often filled with blood and the tumor is poorly exfoliative

Surgical biopsy

- Splenectomy recommended for suspected splenic lesions or for those with a chance of rupturing (cavitary, large, fluid-filled)
- Incisional biopsies (Tru-cut, punch biopsy, etc) that do not remove the entire tumor run the risk of hemorrhage

Thoracic radiographs

- To identify pulmonary metastasis and pericardial effusion

Cardiac ultrasound

- Sensitivity for finding cardiac masses is questionable unless effusion is present

CT or MRI

- Often recommended for surgical planning for HSA affecting the subcutaneous space or retroperitoneal space

CBC, chemistry panel, urinalysis

- Common findings: anemia (with or without regenerative response), thrombocytopenia, presence of **schistocytes**

Coagulation panel

- Prolonged clotting times if in disseminated intravascular coagulation (DIC)
- Rule out rodenticide toxicity for questionable cases of hemoabdomen

Treatment

- Resuscitate and stabilize with IV fluids and blood products as necessary for hemoabdomen
- Exploratory surgery to remove the primary tumor and biopsy abnormal tissues
- Adriamycin-based chemotherapy to help delay development of metastasis and prolong survival

Prognosis

Prognosis of the splenic form depends on the stage of the disease and whether or not Adriamycin is administered:

- Surgery alone median survival time: 3 weeks-3 months
- Stage I- single lesion without hemorrhage and treated with surgery and Adriamycin-based chemotherapy: 9 months
- Stage II- single lesion with hemorrhage and treated with surgery and Adriamycin-based chemotherapy: 5-6 months
- Stage III- metastasis present treated with Adriamycin chemotherapy: 3.5 months

Cutaneous Hemangiosarcoma

General Information

- Induced by chronic **sun exposure**
- Dogs with increased risk:
  - Breeds with unpigmented skin, thin short hair coats, with high amounts of sun exposure
  - Fawn colored Pit Bulls, Whippets, Dalmatians, English Pointers, etc
- Commonly affected sites:
  - Sparsely haired areas
  - **Ventral abdomen and medial thighs**
  - All sun-exposed areas are abnormal and have potential to undergo malignant transformation and form multiple tumors
  - Can occur in conjunction with solar-induced squamous cell carcinoma
- Biological behavior is different from visceral and subcutaneous forms of HSA
  - About 1/3 may metastasize and are more likely associated with advanced, invasive forms of the disease

Treatment

- Surgery to remove invasive or problematic (bleeding, infected) lesions
- Prevention: apply sun block or keep indoors during intense sunlight hours for dogs with thin hair coats and unpigmented skin

Prognosis

- May live for years with these tumors
- New tumors will form since all of the affected skin is abnormal