

LCPG DIAGNOSTIC EXERCISE # 3 (September 2010)

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History:

Six-and-a-half-year-old German Shepherd dog with respiratory distress. Thoracic radiographs indicated disseminated interstitial nodular infiltrate. The dog was euthanized due to no response to treatment.

Necropsy findings included:



Purdue University

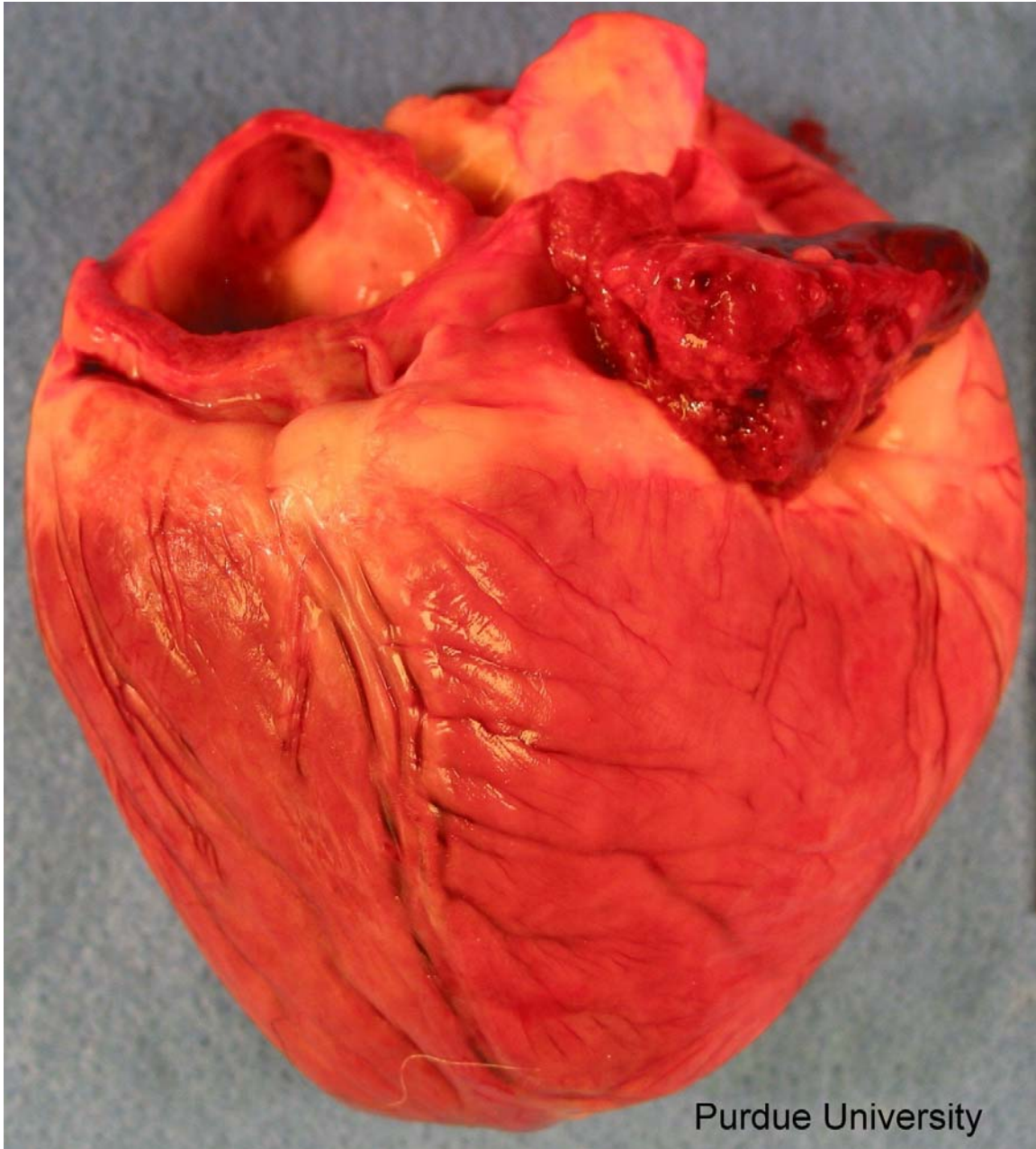
Please provide:

1. Description: The lungs are diffusely red. Hundreds of dark red, slightly raised, variably sized (up to 2 cm in diameter) nodules are scattered throughout the pulmonary parenchyma.

2. Morphologic diagnosis: Metastatic hemangiosarcoma

3. *Differential diagnosis:* Metastatic melanoma

4. *Associated lesion(s):* Hemangiosarcoma in the right atrium or in the spleen. This specific dog had hemangiosarcoma in the right atrium (interpreted as the primary site of the neoplasm) and in the liver.





If the lung lesion had been metastatic melanoma, the associated lesion would be oral melanoma.

5. *Associated hematologic finding(s)*: Increased nucleated red blood cells, polychromasia, schistocytes, acanthocytes and thrombocytopenia on the complete blood count (CBC) strongly suggest the presence of hemangiosarcoma.

6. *Immunohistochemical characteristic(s)*: Neoplastic cells are positive for the factor VIII-related antigen and CD31, both of which are markers of endothelial cells. This is particularly useful in cases where poorly differentiated hemangiosarcomas need to be differentiated from spindle cell sarcomas.

Discussion:

Hemangiosarcoma, a malignant tumor of endothelial cells, occurs most commonly in old dogs. German shepherd is the most commonly affected canine breed. Particularly visceral hemangiosarcomas are considered highly malignant neoplasms, with both local infiltration and metastases occurring early in the course of the disease. The most common primary sites are the right atrium and spleen. Metastases are typically widespread, especially to the lungs, but also to the liver, brain, skeletal muscle, bone, adrenal glands, and other tissues. Up to 65% of dogs with right atrial hemangiosarcoma have concurrent metastatic disease. Hemangiosarcomas in the lung

and liver may rarely be primary, but a hemangiosarcoma in these organs should be considered metastatic until proven otherwise. In this dog, the typical “cannonball” appearance (multiple, well circumscribed, parenchymal masses of variable sizes) of the neoplasm in the lung and liver are consistent with metastatic disease secondary to the right atrial hemangiosarcoma. Death is often associated with rupture of the neoplasm and resultant hemoabdomen or hemopericardium. Also this animal may have died of subsequent cardiac tamponade had it not been euthanized.