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Clinical History: A 13-year-old, medium-sized, intact female mongrel dog presented to a Brazilian veterinary hospital with a large tumor in the thoracic/sternal region. The physical exam did not reveal any cardiac or respiratory abnormalities. Blood tests and X-ray were performed (see below). A surgery was scheduled to remove the tumor; however, due to rapid tumor growth in the following days, the dog was submitted to euthanasia prior to the procedure.

Laboratory Findings: Blood tests revealed normochromic normocytic anemia, leukocytosis due to neutrophilia and increased alkaline phosphatase (1.059 IU/L [reference: 20–56 IU/L]). In the chest radiograph, a radiopaque mass was observed involving the sternal area and ribs and invading the thoracic cavity (Figure 1).

Necropsy Findings: At necropsy, the mass in the ventral thoracic/sternal region (Figure 2) measured approximately 18 x 13 x 11 cm, was firm, and was covered by skin. It was adhered to the musculature and caudal ribs and extended into the thoracic and abdominal cavities. The cut surface was firm to hard and white with soft red (hemorrhagic) areas. The mass involved at least four ribs. The lungs had three firm white nodules, up to 2 cm in diameter. In the endocardium (right atrioventricular valvular and chordae tendineae areas), there were multiple coalescing white, smooth, shiny, firm, 0.3 to 0.5 cm nodules (Figures 3 and 4).
Radiographic and Gross Images:

Figure 1

Figure 2
**Follow-up Questions:** Morphologic diagnoses (mass involving the ribs and the endocardial nodules); potential physical exam finding associated with the cardiac lesion; potential findings in other organs.
The Diagnostic Exercises are an initiative of the Latin Comparative Pathology Group (LCPG), the Latin American subdivision of The Davis-Thompson Foundation. These exercises are contributed by members and non-members from any country of residence. Consider submitting an exercise! A final document containing this material with answers and a brief discussion will be posted on the CL Davis website (http://www.cldavis.org/diagnostic_exercises.html).

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