

Case of the month

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History:

Oliver, a 12-year-old male neutered Yorkshire Terrier weighing 7.7 lbs, presented for occasional wheezing for the last few weeks. His chest radiographs showed a large soft tissue opacity in the region of the cranial left lung lobe, near the heart base. The remainder of the lungs and the cardiac silhouette appeared normal. On physical exam, Oliver was bright, alert and responsive. He had pink mucous membranes, normal breathing, normal heart sounds, clear lungs, a body condition score of 5/9, a pulse of 120/min, and a respiratory rate of 30/min. No recent bloodwork was available.

During his echocardiogram, Oliver did not tolerate laying on his right side and struggled to breathe, although he recovered quickly once standing. He was given 0.8 mg butorphanol IV (0.1 mg/lb). The remainder of the right-side views were obtained with Oliver standing and he tolerated well laying on his left side.

Chest radiographs:



Select Echocardiogram views:

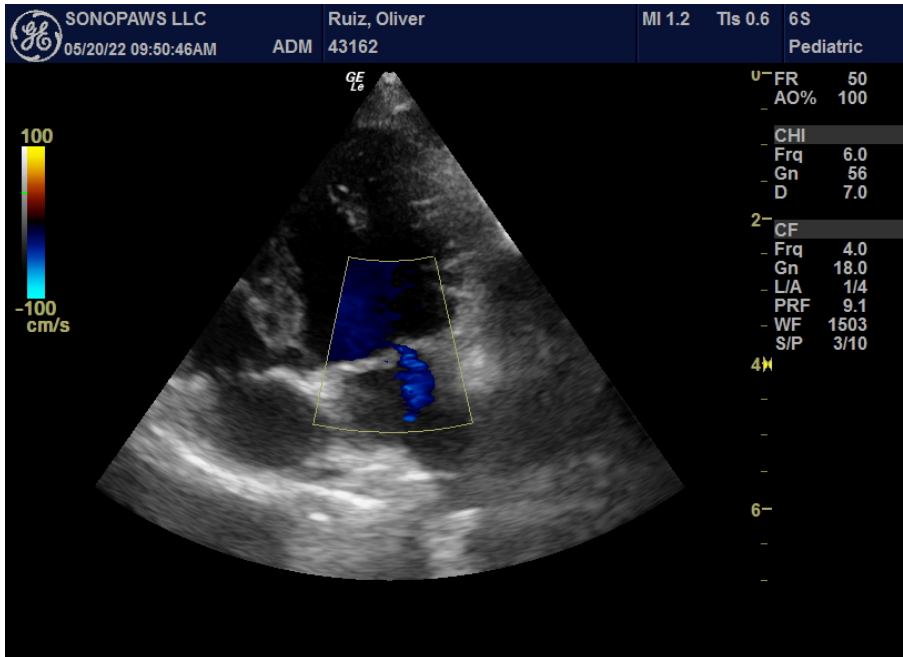


Image 1: Left apical 4-chamber view. Color doppler on the mitral valve demonstrating mild MR.

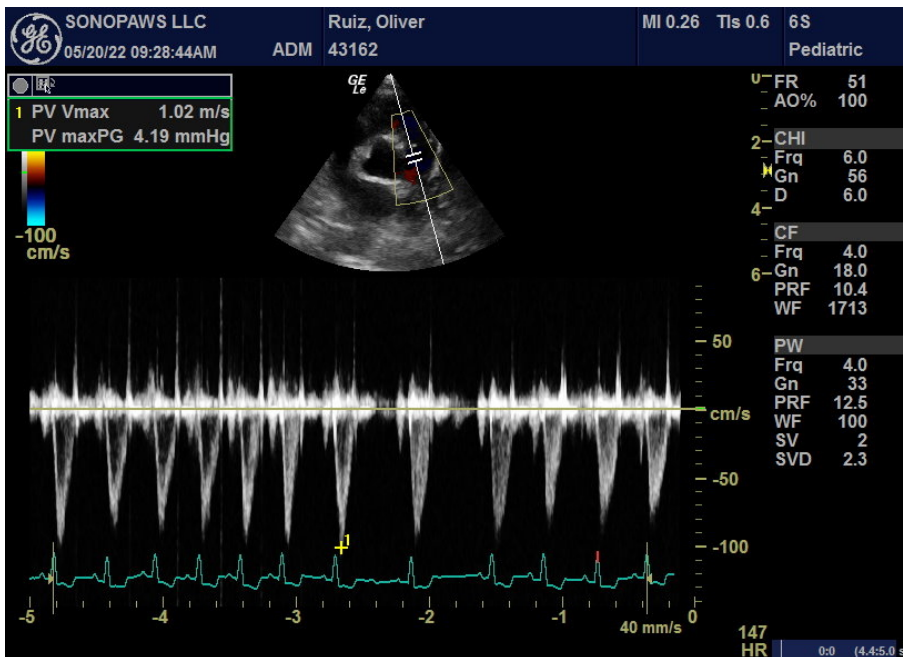


Image 2: Right parasternal short axis view of the pulmonary artery. Normal peak velocity of 1 m/sec with laminar flow on PW.

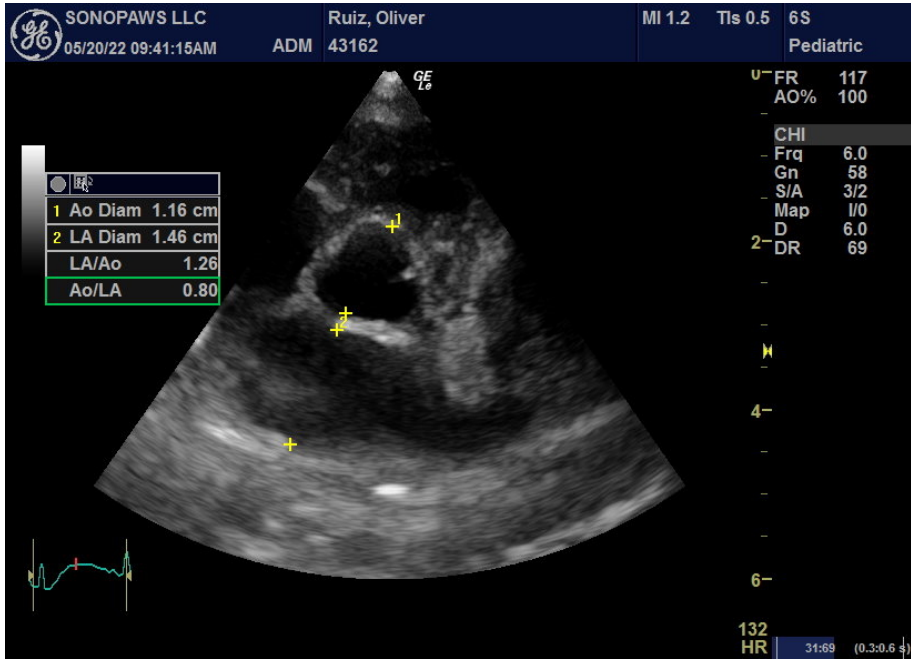


Image 3: Aortic base transverse view showing a normal La/Ao ratio of 1.3.

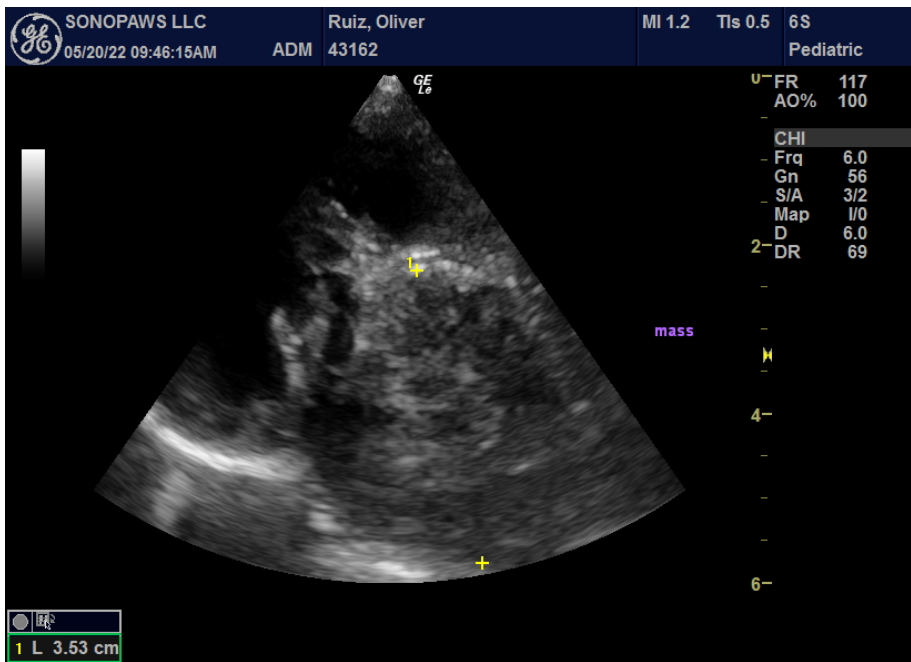


Image 4: Right parasternal transverse view showing a 3.5cm hypoechoic heterogeneous mass.

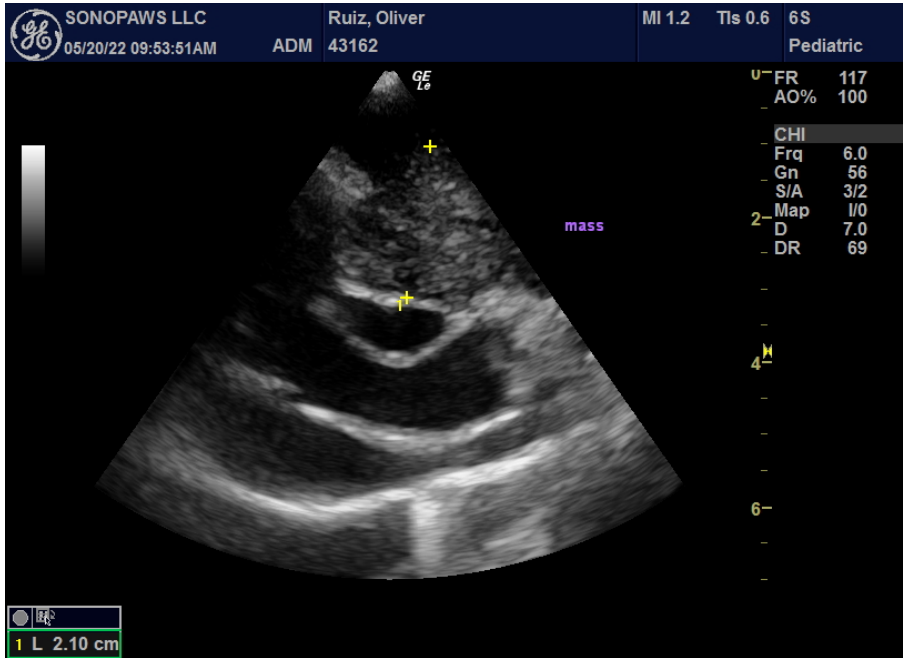


Image 5: Left parasternal long axis view. The mass measures 2.1cm wide near the aorta.

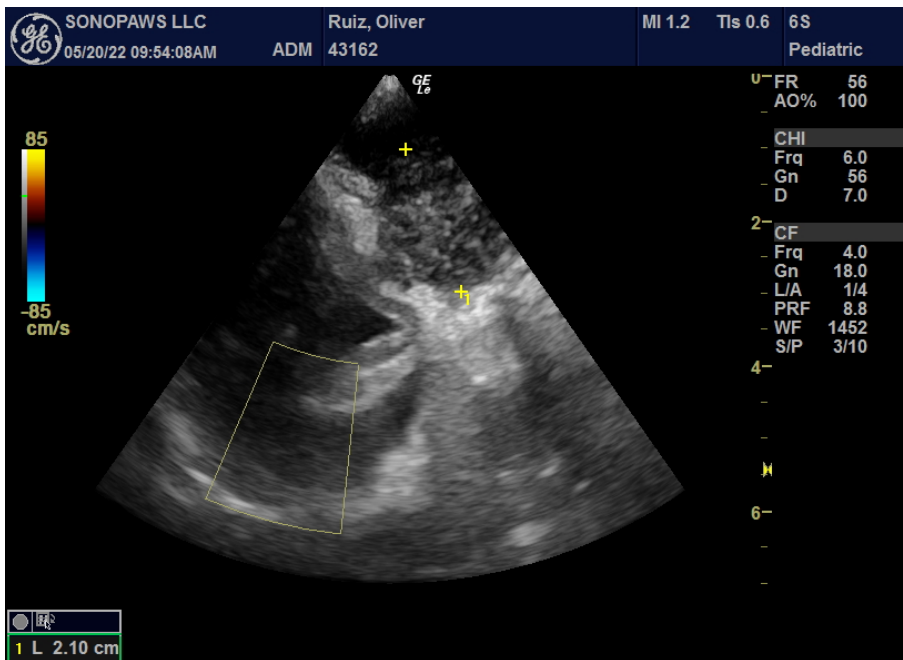


Image 6: Left parasternal view of the normal right atrium and auricle. The mass is partially seen and does not appear to involve the right atrium or auricle.

Link to a cineloop of the mass (Sonopaws Facebook page):

<https://fb.watch/eayoTHrObk/>

Conclusion of the echocardiogram:

- Stage B1 MVD, normal left ventricular study, no cardiac medication needed at this time.
- 3-4cm hypoechoic and heterogenous mass in the region of the heart base: chemodectoma vs other.
- No pericardial effusion.
- The mass may or may not be the cause of Oliver's respiratory signs.

An abdominal ultrasound was recommended to rule out abdominal neoplasia. The owners declined further diagnostics.

Discussion:

Chemodectomas, also known as aortic body tumors, are slowly progressive and are often found as an incidental finding during an echocardiogram. They can also cause pericardial effusion or compression of surrounding structures. Brachycephalic breeds are predisposed. Chronic hypoxia may stimulate chemoreceptor cell proliferation and give rise to neuroendocrine heart base tumors¹. Cardiac tumors are in general incurable, although surgical debulking and pericardectomy may increase survival time. Chemotherapy (Palladia) or radiotherapy could also be discussed with an oncologist.

References:

¹ Kisseberth W, Withrow S, *Neoplasia of the heart*, Small Animal Clinical Oncology , 5th ed. St. Louis, Saunders/Elsevier 2013, 700-4.

Thank you to Dr. Coursen & Dr. Embree, primary veterinarians at Hayfield Animal Hospital.