

Case Study: new murmur in an adult dog
by Janet Olson, DVM, DACVIM (Cardiology)

History: Pearl, a 5 year old, female spayed, 34 kg Boxer dog presented to the St. Elsewhere Animal Hospital with the following pertinent history: 1 to 1 1/2 week history of lameness originating in the rear limb with a suspected ACL tear, which became more of a forelimb lameness. She was diagnosed with anaplasmosis and started on doxycycline. However, her status has continued to deteriorate with generalized weakness, excessive panting and an episode described as her eyes rolling back in her head. A new, previously undetected murmur was heard.



Questions: What are your major rule outs for an adult onset heart murmur?

Primary heart disease: dilated cardiomyopathy (DCM - she is a boxer after all), chronic degenerative valve disease (CDVD)

What about in the face of illness? Endocarditis. Did you know the aortic valve is the most common valve to develop endocarditis in a dog?

Physical Examination: Pearl was quiet, but alert and responsive. Heart rate was elevated at 140 beats per minute with extra heart sounds noted. A grade 4/6 to-and-fro (systolic and diastolic) heart murmur was appreciated on the left side of the heart. Femoral pulses were bounding. Respiratory rate characterized by panting, but when resting, the rate was not excessive.

Question: What causes a to-and-fro heart murmur? To-and-fro murmurs are heard in both diastole and systole like a continuous murmur. However, a continuous murmur is caused by a singular defect (i.e. a patent ductus arteriosus) and to-and-fro murmurs are caused by two separate defects (i.e. pulmonic stenosis - systolic, and concurrent pulmonic insufficiency - diastolic).

Diagnostic Performed: In addition to the physical exam, thoracic radiographs were taken and a 6 lead ECG and echocardiogram performed.

Results:

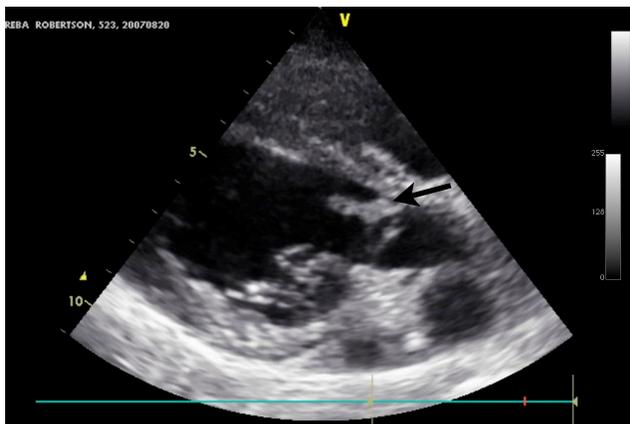
Radiographs: unremarkable

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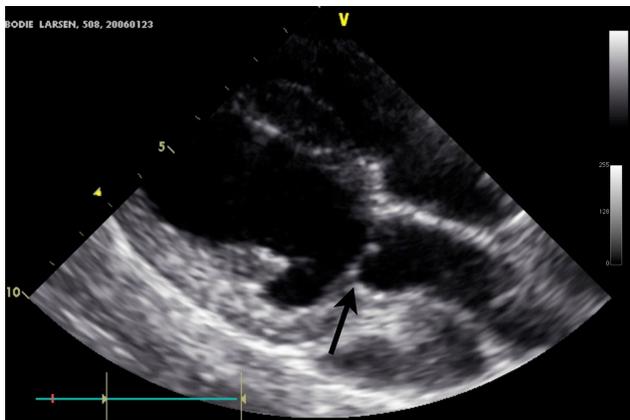
ECG: normal sinus tachycardia (rate 140 bpm)



Echocardiogram: See for yourself: Right parasternal long axis view optimized to the left ventricular outflow tract (level of the aortic valve - see tip of arrow in first image)



Note the very thickened aortic valve leaflet!



Compare to normal (Second image). Compare aortic valve at tip of arrow.

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Assessment: Based on age, clinical signs and the onset of a new murmur (despite the absence of a fever), the most likely cause of the aortic valvular changes is aortic endocarditis - an infection seeded on the aortic valve. The cause of the infection, however was unknown and additional testing was required to obtain a definitive diagnosis. Depending on the cause and severity, aortic endocarditis can be very challenging to treat. Additional testing is directed toward identifying a primary cause. Therefore, blood cultures, urine cultures and joint cultures should be pursued.

TAKE HOME MESSAGE: Hear a new murmur in an adult dog that is ill, even in the absence of a fever, an echocardiogram should be performed to help diagnose or rule out aortic endocarditis. Without early and aggressive intervention, aortic endocarditis is often fatal.