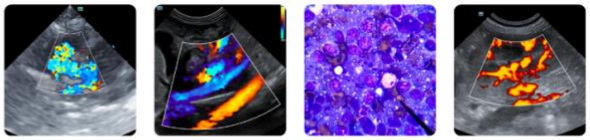

PATIENT

Frida Pineda

SPECIES

Canine

BREED

Pitbull

SEX

Spayed Female

AGE

2 Years

WEIGHT

27 kg

INTERPRETED BY

Bradley Harris, DVM, DACVECC, DACVIM (cardiology)

IMAGING PERFORMED BY

Catherine Alexander, LVT

HOSPITAL NAME

NorthStar VS

REFERRING VET

Dr. Mehanni

INVOICE

37394

DATE

6/7/26

PRESENTING CLINICAL SIGNS

History: Patient presents for coughing starting last week. Per owner patients cough has increased in duration wih occasional production. Today patient reportedly has not eaten in 24 hours. Patient may have had diarrhea this morning. Patient does go to dog parks once a week.

Abnormal PE/Chem/CBC/UA Results: There is particular concern for heartworm disease, and appropriate testing is strongly recommended. Additional differential diagnoses include parasitic and fungal respiratory diseases, which should also be investigated as clinically indicated. Further evaluation with bronchoscopy, bronchoalveolar lavage, and airway sampling for cytology and bacterial/fungal culture may be helpful to better characterize the pulmonary disease process and guide therapy. Empirical broad-spectrum deworming may be considered while awaiting diagnostic results. Echocardiography is also recommended to further assess cardiac structure and function, evaluate for pulmonary hypertension.

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

CANINE CARDIAC PARAMETERS	BW	HR BPM	LAD 4 ch Long	RAD 4 ch Long	La/Ao Heart Base	LVIDd	LVIDs
NORMAL PARAMETER		50-100			<1.6		
PATIENT	27	150	3.20	3.45	1.37	3.78	2.44
CANINE CARDIAC PARAMETERS	**FS**	**EPSS**	**PV V MAX (m/s)**	**AV V Max (m/sec)**	**MR Vmax**	**TR Vmax**	**RPA distensibility (normal >30%)**
NORMAL PARAMETER	28-40	<0.6	0.7-1.6	0.7-1.7	4.5-5.5	< 2.7	
PATIENT	35	0.3	0.8	1.1	NP	NP	22

Cardiac Presentation

The left atrium is normal in dimension. The left ventricle is normal in dimension, with normal systolic function. The right atrium and ventricle are upper limits of normal to mildly enlarged, with normal systolic function. The anterior and posterior mitral valve leaflets are appropriately thin with adequate apposition, intact chordae, and there is no significant prolapse. There is no significant mitral regurgitation identified. The tricuspid valve leaflets are appropriately thin with adequate apposition, intact chordae, no significant tricuspid regurgitation and no doppler evidence of pulmonary hypertension. The left ventricular outflow tract demonstrated normal laminar flow and the visible aorta is unremarkable. The right ventricular outflow tract assessment revealed normal laminar flow,

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with a mildly dilated main pulmonary artery diameter and reduced right pulmonary artery distensibility. There is no pulmonic and no aortic valve insufficiency identified. There is no visible pericardial, pleural, or free peritoneal fluid documented. No evidence of hepatic venous congestion is noted. The cardiac chambers, pericardial and visible extra-cardiac regions were free of masses, spontaneous echo contrast, or thrombi.

ULTRASONOGRAPHIC FINDINGS

- These findings identify evidence of at least mild pulmonary hypertension in the absence of any left-sided disease. This makes the PH more likely related to primary respiratory disease or other etiology (non-type 2 PH). Pulmonary hypertension in dogs is most commonly secondary to primary respiratory disease (chronic bronchitis, pulmonary fibrosis, or other forms of pulmonary interstitial disease). Pulmonary hypertension can also develop in dogs with severe heartworm disease or secondary to pulmonary thromboembolism (PTE). Less commonly, pulmonary hypertension is identified in dogs as an idiopathic condition. Pulmonary hypertension commonly causes syncope, and a patient's signs may be attributable to this condition.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Recommendations/Treatment:
Given the mild degree of right sided cardiac enlargement, cardiac therapy is reasonable at this time. Treatment for the PH/presumed respiratory disease is also warranted, if clinical signs are present. Therapy should include Vetmedin (0.25-0.35 mg/kg BID) and sildenafil (2 mg/kg TID) or tadalafil (2mg/kg SID). Heartworm testing is recommended in accordance with the American Heartworm Society guidelines. Baseline thoracic radiographs, blood pressure and chemistry panel should be performed now, and again in 1-2 weeks. A repeat echocardiogram, thoracic radiographs, blood pressure, and chemistry panel is indicated in another 3-6 months, or sooner if progression is suspected, clinical signs develop/worsen, or additional cardiac therapy is being contemplated.

Anesthesia considerations:
While there is no CHF present, there is likely an increased anesthetic risk which must be considered prior to any anesthetic procedure. If anesthesia is necessary, then alpha-2 agonists, ketamine, high dose acepromazine, and Telazol should be avoided. If an ACE inhibitor (enalapril, benazepril) or spironolactone is being given, it should not be administered on the morning of general anesthesia. Other cardiac medications should be administered per the normal dosing schedule. Fluid therapy during anesthesia should be considered at a reduced rate (e.g., 5 ml/kg/hour) if possible. A shorter anesthetic duration will reduce the risk of complications. Pre-oxygenation is advised. Premedication with an opioid (i.e., butorphanol, hydromorphone, oxymorphone) with or without a benzodiazepine is generally the safest protocol. An induction agent such as Propofol, alfaxalone, or diazepam/etomidate can be used to effect. Maintenance of anesthesia with isoflurane or sevoflurane is reasonable.

Diet:
A high-quality food from Hills, Royal Canin, Science Diet, Eukanuba, Iams, or Purina that is highly

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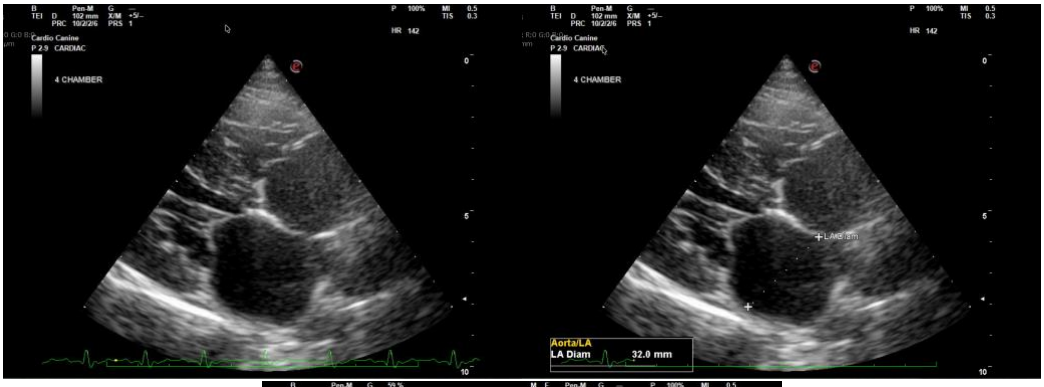
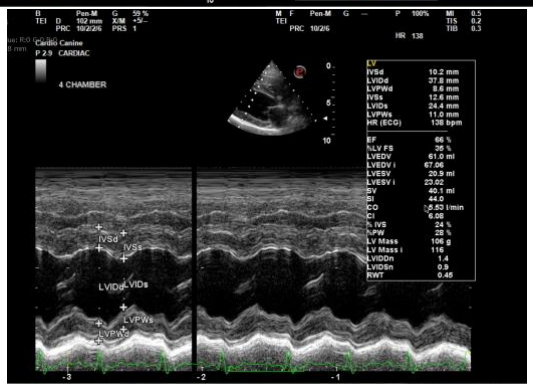
palatable with adequate protein and calories for maintaining optimal body condition with mild dietary sodium restriction (<100 mg/100 kcal) is recommended. Consider omega-3 fatty acid supplementation. Ensure the patient is not currently receiving a boutique, exotic, or grain-free diet.

Activity:
Moderate physical activity (meandering walks, exploring the backyard, playing with toys inside, getting excited when family gets home, etc.) is encouraged, but periods of strenuous aerobic activity (jogging, strenuous outdoor ball play, prolonged play at the dog park, etc.) should be avoided, especially during periods of high heat (> 80 F) and humidity. Dogs with heart disease tend to tolerate cool and cold temperatures much better than high temperatures. Avoid sudden increases in activity (e.g. 2 block walks during the week but 2 mile walks followed by 30 minutes at the dog park on the weekends) as this may be difficult for the cardiovascular system to deal with.



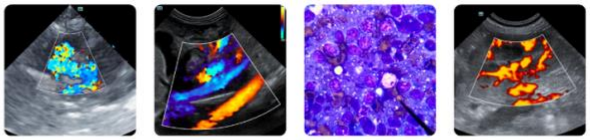


The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance please contact me.

Bradley Harris, DVM, DACVECC, DACVIM (cardiology)

info@SonoPath.com



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