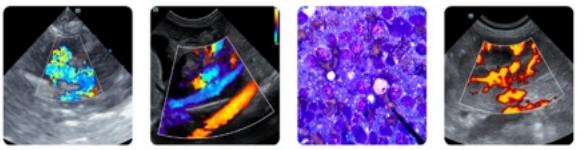


SonoPath www.thefocalzone.com info@thefocalzone.com 289.808.2608

PATIENT

Miss Goody McKay

SPECIES

Canine

BREED

Chihuahua Mix

SEX

Spayed female

AGE

14 years

WEIGHT

3.6 kg

INTERPRETED BY

Bradley Harris, DVM, DACVECC, DACVIM (cardiology)

IMAGING PERFORMED BY

Crystal Hill

HOSPITAL NAME

Parkside AH

REFERRING VET

Dr. Zak

INVOICE

71943

DATE

2/25/26

PRESENTING CLINICAL SIGNS

- Echo done last year elsewhere indicated no need for meds
- Has been treated for Heartworm, is now on Heartworm prevention
- Last HW test was positive but negative for microfilaria
- Last week presented for abdominal breathing, crackling lung sounds which responded to Furosemide until we could get Echo done
- Has been on Furosemide 20mg 1/2 tab Am and 1/4 tab PM and Hydrocodone as needed

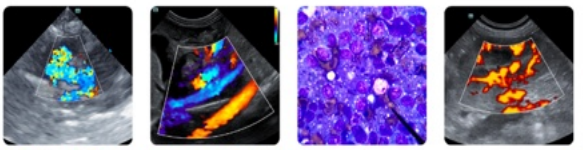
ULTRASONOGRAPHIC EXAMINATION OF THE HEART

The left atrium is normal in dimension. The left ventricle is normal in dimension with normal systolic function. The right atrium and ventricle are mild to moderately enlarged with reduced systolic function. The anterior and posterior mitral valve leaflets are appropriately thin with adequate apposition and 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 and intact chordae, with mild to moderate tricuspid regurgitation. There is evidence of at least moderate pulmonary hypertension, despite lack of documentation of a increased RV pressure gradient on doppler. 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, increased main pulmonary artery diameter and reduced 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.

CANINE CARDIAC PARAMETERS	Body Weight kg	HR BPM	LAD 4 ch Long	RAD 4 ch Long	La/Ao Heart Base	LVIDd	LVIDs
NORMAL PARAMETER		50-100			<1.6		
PATIENT	3.6 kg	100	1.21	1.82	1.36	1.03	0.46
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	55	NM	0.8	1.2	NM	1.1	NM

ULTRASONOGRAPHIC FINDINGS

These findings identify changes consistent with significant pulmonary hypertension (PH) in the absence of any clinically relevant left-sided disease. Therefore, cor pulmonale secondary to primary pulmonary disease/PH is the likely cause for morbidity. Pulmonary hypertension in dogs is most commonly secondary to primary respiratory disease (chronic bronchitis, pulmonary fibrosis, or other forms of



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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. The degree of PH has resulted in right sided cardiac enlargement (cor pulmonale), and commonly causes increased respiratory effort or syncope. The clinical signs are likely attributable to this condition.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Given the degree of right sided cardiac enlargement, cardiac therapy is reasonable at this time. Treatment for the PH/presumed respiratory disease is also warranted, as clinical signs are present. Therapy should include Vetmedin (0.25-0.35 mg/kg BID), sildenafil (2 mg/kg BID), and enalapril (0.5 mg/kg BID assuming normotension and lack of renal insult). Discontinue the diuretics given the small left sided measurements. Baseline thoracic radiographs, blood pressure and chemistry panel should be performed now, and again in 1-2 weeks. If there is pulmonary infiltrate present, corticosteroids should be used as an anti-inflammatory. Therapy for active heartworm disease should be pursued according to the American Heartworm Society Guidelines (https://www.heartwormsociety.org/veterinary-resources/american-heartworm-society-guidelines). 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:

Anesthesia should be avoided if possible. If anesthesia is necessary, then alpha-2 agonists, ketamine, 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 (5 ml/kg/hour) if possible (i.e., if not hypotensive). A shorter anesthetic duration will reduce the risk of complications. Pre-oxygenation is mandatory. Premedication with an opioid (e.g., 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 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.

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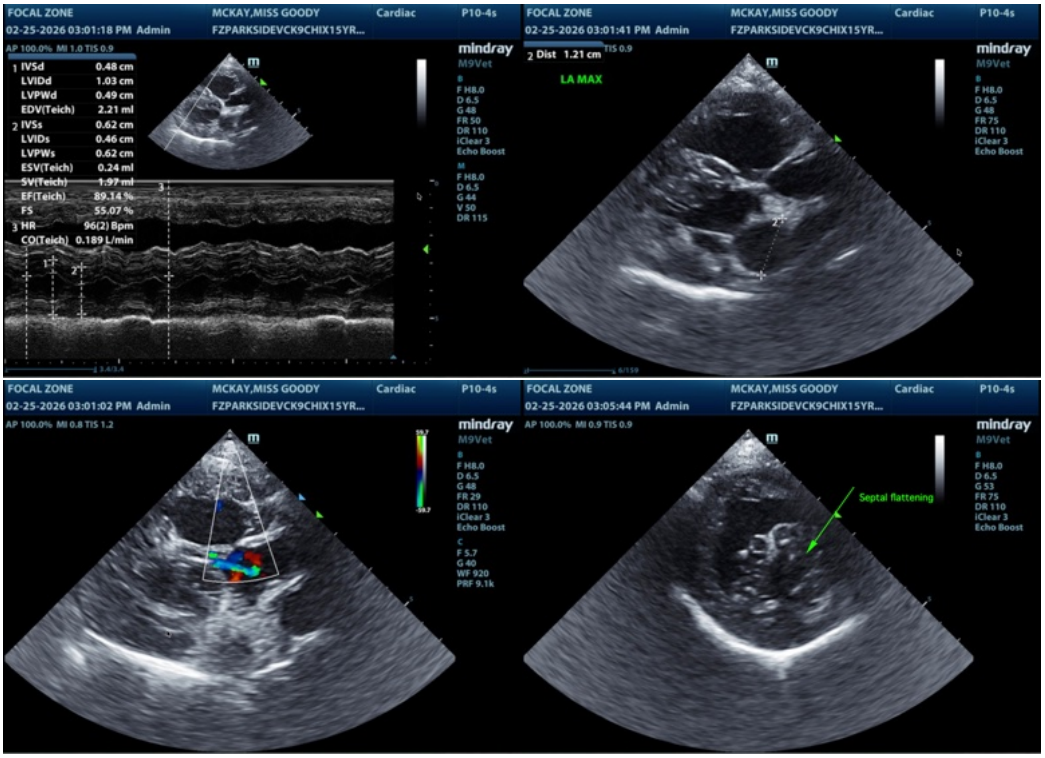

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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