

PATIENT

Kammi Lowenstein

SPECIES

Canine

BREED

Chihuahua Mix

SEX

Spayed Female

AGE

13 Years

WEIGHT

5.67 kg

INTERPRETED BY

Bradley Harris, DVM,
DACVECC, DACVIM
(cardiology)

IMAGING PERFORMED BY

Dr. Kuzimski

HOSPITAL NAME

Animal Emergency
Hospital Deland

REFERRING VET

Dr. Kuzimski

INVOICE

14680

DATE

03/27/26

PRESENTING CLINICAL SIGNS

- Patient has started to have a cough recently - dry, hacking. owners went out and about and when they came over, she got very worked up, collapsed - stiffened up then recovered slowly. on Vetmedin, benazepril, and Lasix. patient has not had an echocardiogram or per owner has not yet been in failure

Abnormal PE/Chem/CBC/UA Results: Heart: grade 5/6 systolic, apical heart murmur. Pulses strong and synchronous CBC. NSF Chemistry. ALT 132 EPOC. potassium 3.1 Radiographs- Attached Other: Blood pressure. 181/127 MAP 150mmHg ECG sent with consultation

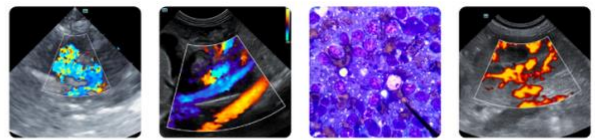
ULTRASONOGRAPHIC EXAMINATION OF THE HEART

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	5.67	180	4.4	1.8	3.83	3.74	2.5
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	33	NM	0.6	NM	NM	NM	27

Cardiac Presentation

The left atrium is severely enlarged. The left ventricle is moderately enlarged with reduced systolic function. The right atrium and ventricle are normal in dimension with normal systolic function. The anterior and posterior mitral valve leaflets are thickened and redundant consistent with myxomatous changes, and there is moderate prolapse. There is severe mitral regurgitation identified. The tricuspid valve leaflets are thickened and redundant, with mild to moderate tricuspid regurgitation and no overt 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 with appropriate main pulmonary artery diameter and marginally 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. There are no thoracic radiographs attached to the study.

ECG



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There is a single-lead ECG available for review. The underlying rhythm is regular at an average rate of 180bpm. The rhythm appears to be sinus in origin with narrow QRS complexes. There is no atrial or ventricular ectopy and no atrioventricular block identified. This is most consistent with a normal sinus tachycardia.

ULTRASONOGRAPHIC FINDINGS

- These findings are consistent with degenerative/myxomatous mitral valve disease with moderate hemodynamic effects consistent with at least ACVIM Stage B2. The distinction between ACVIM stage B2 and ACVIM Stage C (congestive heart failure) is made via evidence of pulmonary edema (traditionally via thoracic radiographs), however given the patients history and chamber dilation, congestive heart failure is a likely etiology of any previous clinical/radiographic signs. The syncope is suspected to be secondary to the severity of the chamber dilation, but an occult dysrhythmia or pulmonary hypertension cannot be completely excluded.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Continued therapy for CHF is recommended, with Lasix (2mg/kg BID), enalapril (0.5mg/kg BID assuming normotension and lack of renal insult), Vetmedin (.25-.35mg/kg BID), and spironolactone (1-2mg/kg BID). A repeat chest X-rays, BP, and chemistry should be performed now for a baseline, and again in 1-2 weeks. A repeat echo is indicated in 3 months. Owners should monitor resting respiratory rate at home. Values above 30 breaths/minute or an increase in respiratory rate 10% above baseline should prompt veterinary re-evaluation.

Anesthesia considerations:

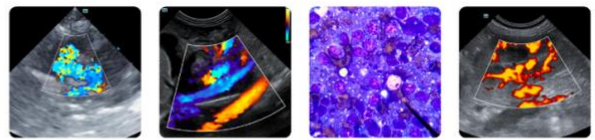
Anesthesia should be avoided until manifestations of congestive heart failure (edema/effusion/respiratory distress) have resolved. Following that time, if anesthesia is necessary, then alpha-2 agonists, ketamine, high dose acepromazine, and Telazol should be avoided. If an ACE inhibitor (enalapril, benazepril) 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. Anesthetic IV fluid use should be limited to < 3 ml/kg/hr and, if IV fluid therapy is administered during the procedure, a 1 mg/kg dose of IM Lasix should be administered when the patient is awake and standing in recovery. 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. Dobutamine (2.5-10 µg/kg/min as a CRI, starting at 2.5 µg/kg/min and increasing the dosage incrementally) may be used in lieu of fluid boluses to augment systemic blood pressure.

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. Avoid any boutique, exotic, or grain-free diets.

Activity:

Moderate physical activity (meandering walks, exploring the backyard, playing with toys inside, getting



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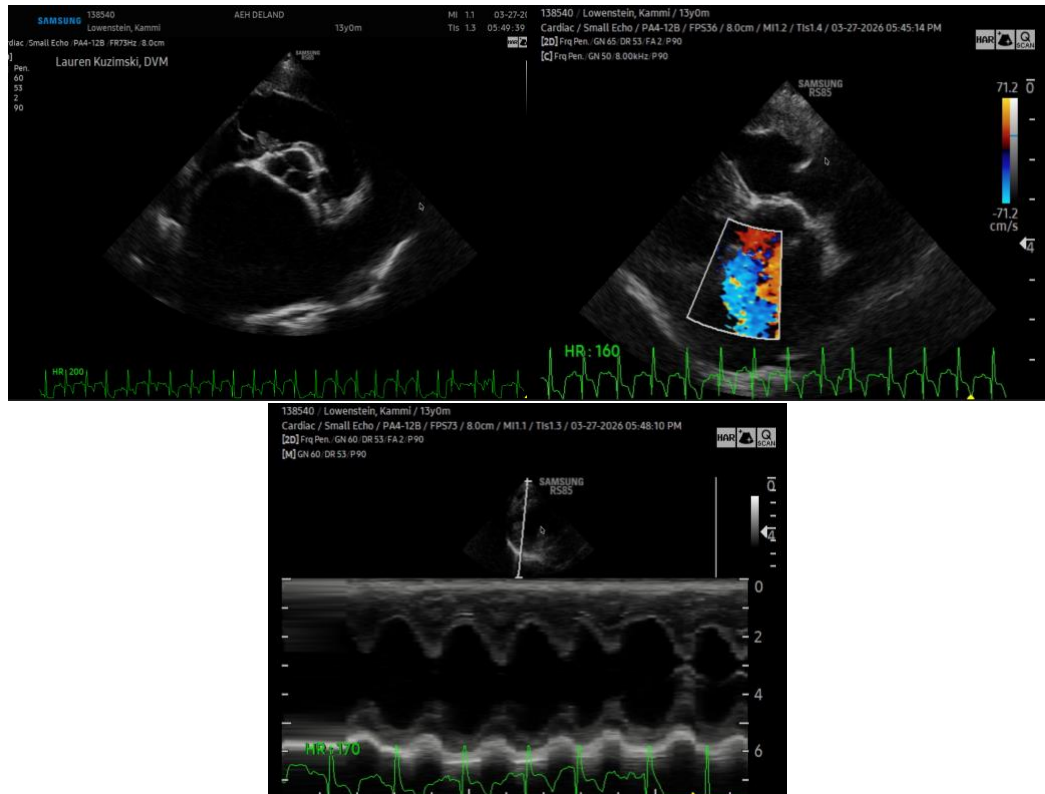
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excited when family gets home, etc.) is encouraged, but periods of strenuous aerobic activity (jogging, strenuous outdoor ball play, prolonged play at the dog park, etc.) should be avoided, especially during periods of high heat (> 80 F) and humidity. 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