

PATIENT

SPECIES

Canine

BREED

King Charles Cavalier

SEX

Neutered Male

AGE

7 Years 10 Months

WEIGHT

23 lbs

INTERPRETED BY

 DVM,
DACVECC, DACVIM
(cardiology)

IMAGING PERFORMED BY

Dr. Wasserman

HOSPITAL NAME

REFERRING VET

INVOICE

DATE

PRESENTING CLINICAL SIGNS

Recheck echo (first with SonoPath). First echocardiogram performed 7/17/25. LV enlargement, LA enlargement, MV b2, 3/6 murmur at that time. Today, heart murmur is 4/6 loudest on the left. Purpose of echocardiogram, evaluate for disease progression. Reportedly showing increased RR while resting. Current medications: Pimobendan 2.5mg PO BID currently. No lasix. Fish oil supplement being given. Sedated with butorphanol 10mg/ml 0.2ml SC once. Adequate for sonogram.

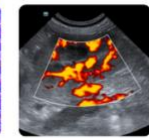
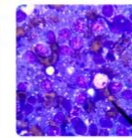
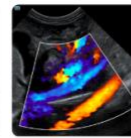
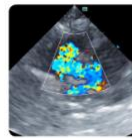
Today: Thoracic rads attached for supplemental review for evidence of CHF only. Doppler BP avg is a 110mmhg today. 12/3/2025 notable chemistry findings: tt4 1.9ug/dl, NA 150meq/L, K 4.8meq/l

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	10.45	130	4.81	2.28	2.1	4.53	2.47
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	45	0.5	0.7	1.0	4.1	2.8	NM

Cardiac Presentation

The left atrium is severely enlarged. The left ventricle is moderately enlarged, with marginal 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 severe prolapse. There is moderate to severe mitral regurgitation identified. The tricuspid valve leaflets are thickened and redundant, with mild to moderate tricuspid regurgitation and evidence of borderline 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 right pulmonary artery distensibility. There is mild 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 is concern for mild pulmonary edema on thoracic radiographs, and there are several lung fields with numerous ultrasonographic B-line artifacts.



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ULTRASONOGRAPHIC FINDINGS

These findings are consistent with degenerative mitral valve disease with significant hemodynamic effects. Given the degree of chamber enlargement, early congestive heart failure is a likely explanation for the radiographic signs, consistent with ACVIM Stage C.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Therapy for CHF is recommended, with Lasix bolus (2-4 mg/kg IV PRN up to 10 mg/kg total dose) or a CRI (0.5-1 mg/kg/hr) as needed to resolve edema. Once oral therapy is started, therapy should include Lasix (2mg/kg BID), enalapril (0.5mg/kg BID assuming normotension and lack of renal insult), and Vetmedin (.25-.35mg/kg BID). Dobutamine (2.5-10 μ g/kg/min as a CRI, starting at 2.5 μ g/kg/min and increasing the dosage incrementally) may be used in addition to the above treatments to improve the left ventricular function and blood pressure in patients that fail to respond adequately to diuretics, pimobendan, sedation, oxygen, and comfort care measures. 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. Consideration could be given to mitral valve repair (open heart vs transcatheter edge to edge repair).

Anesthesia considerations:

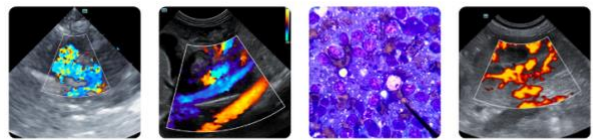
Anesthesia should be avoided until manifestations of congestive heart failure (edema/effusion/respiratory distress) have resolved. Following that time, if anesthesia is necessary, then alpha-2 agonists, ketamine, high dose acepromazine, and Telazol should be avoided. If an ACE inhibitor (enalapril, benazepril) 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 μ g/kg/min as a CRI, starting at 2.5 μ g/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 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



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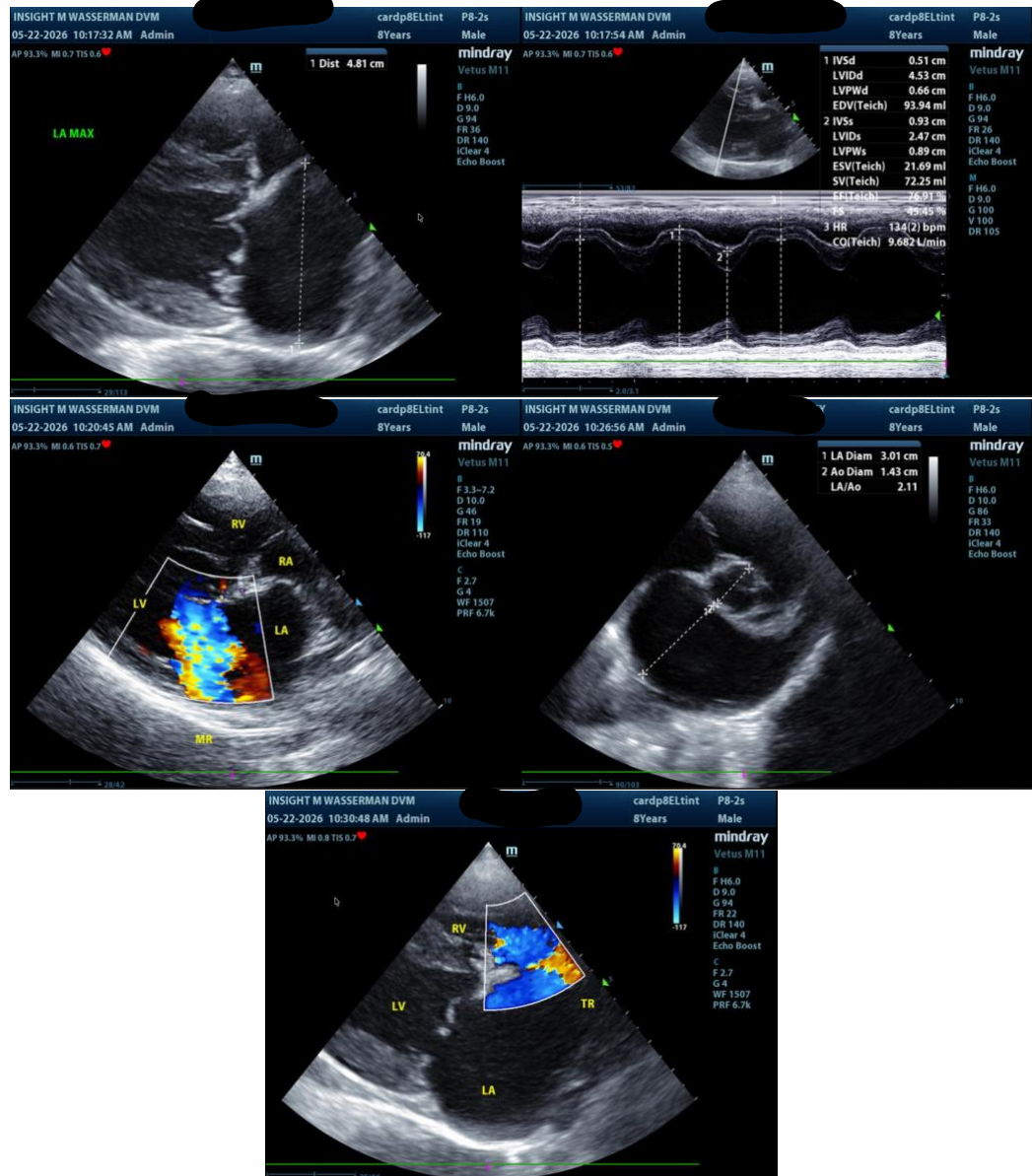
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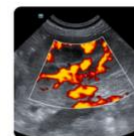
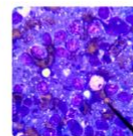
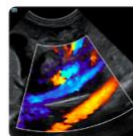
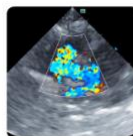
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temperatures much better than high temperatures. Avoid sudden increases in activity (e.g. 2 block walks during the week but 2 mile walks followed by 30 minutes at the dog park on the weekends) as this may be difficult for the cardiovascular system 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



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can be of any further assistance please contact me.

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