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info@cardiacvet.com

Mobile Echocardiogram and X-rays consult.

Name Dog, Cheyenne Sample
Patient Id Sample Dog 1
Date 1/15/2026
Breed Labrador Retriever.
Species Canine.
Sex F - Spayed.
Age or DOB 14Y 10M
Weight 30.5 kg
rDVM Sample Reporting Hospital.
Is this a recheck? No.

Observations

Presenting Complaint (rDVM provided):	Cadiology consult for DVD B2. Cheyenne was presented to rDVM on 1/9/26 due to lethargy, tachypnea, wheezing/coughing. Radiographs indicated early L-CHF vs atypical aspiration pneumonia. An echocardiogram is recommended for further evaluation of DVD B2 progression. Recheck examination on 1/12/26 revealed improved lung sounds compared to 1/9/26. Owner reported that Cheyenne's energy and coughing/wheezing have improved, but still hyporexic. Cheyenne also has a history of Laryngeal paralysis (tie back surgery in 2/2025), Cutaneous Hemangiosarcoma (incomplete excision, currently on olaparib), Lenticular sclerosis, Eyelid mass, and Multiple dermal/SQ masses.
Salient Labwork/Diagnostic Findings (rDVM provided):	Labwork 1/9/26 CHEM 8+: Na 151 (H), BUN 19 (N), Crea 0.7 (N), Hgb 10.9 (L), HCT 32 (L). Blood Pressure- 116-164 mmHg; 5/3/25. Normal, 87 mmHg; 2/26/25. X-rays: Thoracic radiographs obtained for review dated 1/9/26. ***RDVM RAD Findings dated 1/9/26. Subtle unstructured interstitial pattern within the right caudal lung lobe may represent early pulmonary infiltrates secondary to left-sided congestive heart failure (however, pulmonary vascular dilation is not appreciated on this examination, though this should be correlated with administration of a diuretic), though early noncardiogenic pulmonary edema due to upper airway obstruction, pulmonary hemorrhage of unknown etiology, or atypical aspiration pneumonia cannot be entirely ruled out. Generalized cardiomegaly; consider underlying cardiomyopathy (such as hypertrophic cardiomyopathy). Pericardial effusion cannot be entirely ruled out, but is considered less likely. Otherwise static thoracic radiographs. ***VDx Pathology Findings dated 3/3/25: Hemangiosarcoma, extends to specimen margins.
Current Medications (rDVM provided):	Pimobendan 7.5mg PO BID. Clavamox 375mg tablets (468.75mg = 15.4mg/kg) PO q12h for 8 months now (assuming P has aspiration pneumonia). Maropitant 60mg (1.96mg/kg) PO q24h x 3 days. Entyce 90mg (3mg/kg) PO q24h x 3days. Trazodone 150mg (5mg/kg) PO PRN for veterinary visits. Trifexis for HW flea. Gabapentin 100 mg TID. chemotherapy oral EOD - alaporlib.
Source of Diagnostic studies/images provided for interpretation:	rDVM. Cardiac Vet, Inc.
Quality of Exam (as interpreted by DACVIM cardiologist):	The baseline echocardiographic pictures were of excellent quality. All segments were well visualized.
Left Ventricle:	Moderate left ventricular eccentric hypertrophy. Systolic function appears moderately reduced. Normal wall thickness. Diastolic function is normal based on mitral valve inflow velocities.
Left Atrium:	Moderately dilated.
Mitral Valve:	Myxomatous degeneration. Mild thickening of the anterior leaflet. Moderate prolapse of the anterior leaflet. Mild thickening of the posterior leaflet. Moderate mitral regurgitation. Posteriorly-directed jet.
Right Ventricle:	Right ventricular size is normal, subjectively. Subjectively normal wall thickness.
Right Atrium:	Subjectively normal size.
Tricuspid Valve:	Myxomatous degeneration. Mild tricuspid regurgitation present. There is no evidence of pulmonary hypertension (normal RVESP).
Aortic Valve:	Structurally normal with adequate leaflet excursion, laminar flow, normal flow velocities and no significant insufficiency.
Aorta:	Normal.
Pulmonic Valve:	Structurally normal with adequate leaflet excursion, laminar flow, normal flow velocities and no significant insufficiency.
Pulmonary Artery:	Normal.

Pericardium: No evidence of pericardial effusion.

Pleural Space: No evidence of pleural effusion.

Abdominal Cavity: Hepatic veins appear normal, subjectively.

ECG Lead II Echo: Normal sinus rhythm with an average heart rate of 136 bpm. VPCs are present with a maximum coupling rate of 283 bpm. Singular, rare.

Ancillary Diagnostics:

- 4 VIEW THORACIC RADIOGRAPHS (L, R LATERALS, 2 VD PROJECTIONS); 1/9/26.
- For all views included that contain both thorax and a large portion of the abdomen, interpretation will focus on the thorax as part of the requested cardiology consultation.
- Moderate to severe left-sided cardiomegaly is present with loss of the caudal cardiac waist and dorsal deviation of the intrathoracic trachea on the lateral projections, the former suggesting left atrial enlargement and the latter, ventricular enlargement. The mainstem bronchi appear divergent on the VD image. The cardiac silhouette is distended at the 3 o'clock position intimating left auricular enlargement.
- A mild, diffuse bronchointerstitial pattern is evident on all projections. This may represent chronic inflammatory airway disease, a senescent change, or (less likely) an acute inflammatory process.
- No overt CHF.
- Cranial abdominal detail is adequate.

Comments:

- Thank you for this referral. Due to the nature of teleconsulting dictation/recording, please excuse any typos/errors that may occur during reporting. If information appears erroneous and clinically relevant or the clinical or image interpretation does not parallel your findings, please feel free to contact us with questions/concerns.
- For images/diagnostics obtained by the referring veterinarian/client: The information and recommendations provided are based on the images/diagnostics/history presented by the referring veterinarian/client requesting reporting. No evaluation can be communicated regarding pathology that was not visible in the images, diagnostics and/or video clips provided or related pathology/medications/labwork, etc that was not reported in the history provided.

Diagnosis:

- Degenerative Valve Disease (DVD)- mild LAE, moderate MR, mild LVEH, mild systolic dysfunction, trace TR, normal right heart. ACVIM B2 (Apex Veterinary Specialist Echo Report); 5/3/25. Static to mildly proressive in terms of LA size only, moderate MR, moderate LAE, moderate LVEH (static to improved LVIDd when compared to prior), moderate systolic function (static to improved LVIDs when compared to prior), mild TR, normal RVESP, normal R heart size, 1/15/26.
- Cough and tachypnea; 1/9/26. Improved; 1/12/26. Back to baseline, 1/15/26.
- Left-sided congestive heart failure (CHF)- suspected based on clinical signs (cough, tachypnea, lethargy), furosemide administration in history, and subtle unstructured interstitial pattern within the right caudal lung lobe radiographically; 1/9/26. CHF not suspected, 1/15/26.
- VPCs are present with a maximum coupling rate of 283 bpm. Singular, rare, 1/15/26.
- Elevated proBNP 3704; 4/28/25.
- Lethargy; 1/9/26. Resolved; 1/12/26.
- Anemia- Hgb 11.6 (L), HCT 34(L); 2/26/25. RBC 5.59 (L), HCT 39.3 (L), Hgb 13.5 (L); 10/24/25. Hgb 10.9 (L), HCT 32 (L); 1/9/26.
- Thrombocytosis- PLT 581 (H); 6/18/25. Resolved: PLT 407 (N); 8/21/25.
- Electrolyte imbalance- Cl 123 (H); 10/17/23. Cl 108 (L); 11/22/23. Resolved: Cl 118 (N); 2/26/25. Na 151 (H); 1/9/26.
- Renal Parameters- Crea 1.1 (N), BUN 5 (L); 8/22/2019. Crea 1.2 (N), BUN 15 (N); 5/5/21. USG 1.034 (L); 7/18/22. Crea 0.9 (N), BUN 22 (N), SDMA 7 (N); 7/19/22. USG 1.037 (N); 8/12/22. USG 10.26 (L); 9/16/22. Crea 0.8 (N), BUN 18 (N), SDMA 5 (MN); 5/9/23. Crea 0.9 (N), BUN 14 (N); 10/17/23. Crea 0.6 (N), BUN 15 (N); 11/22/23. BUN 16 (N), Crea 0.7 (N); 2/26/25. SDMA 7 (N), Crea 0.8 (N), BUN 21 (N); 4/26/25. USG 1.033 (L/N), Proteinuria 3+; 4/28/25. SDMA 8 (N), Crea 0.9 (N), BUN 22 (N); 6/18/25. USG 1.033 (L/N). Proteinuria 2+; 6/20/25. SDMA 7 (N), Crea 0.7 (N), BUN 19 (N), USG 1.032 (L/N), Proteinuria 3+; 8/21/25. SDMA 5 (N), Crea 0.6 (N), BUN 25 (N), USG 1.044 (N). Proteinuria 3+; 10/24/25. BUN 19 (N), Crea 0.7 (N); 1/9/26.
- Urinary Tract Infection- Bacteriuria present, WBC 23, Hematuria <1 RBC; 7/18/22. E. coli ->100,000 CFU per ml; 8/13/22. No bacteria seen in urinalysis, appears resolved; 9/16/22. Marked cocci in urinalysis; 4/25/25. Rare cocci <9 in urinalysis; 6/20/25. Moderate cocci 9-40 in urinalysis; 8/21/25. Antibiotics initiated; 8/26/25. Marked rods >40; 10/24/25.
- Uroliths- few small (0.2cm) with mild to moderate nonobstructive echogenic debris (AUS findings); 3/19/25. Crystals in Urinalysis- 1+ Ammonium Mg Phosphate; 4/28/25. Crystals in Urinalysis- 2+ Ammonium Mg Phosphate (6-20); 8/21/25. Crystals in Urinalysis- 2+ Ammonium Mg Phosphate; 10/24/25.
- Cutaneous Hemangiosarcoma- incomplete excision 2/26/25. Olaparib initiated based on

DNA sequencing; 5/7/25. History of GI upset on daily olaparib, tolerates every other day dosing.
- Blood Pressure- normal to elevated, 116-164 mmHg; 5/3/25. Normal, 87 mmHg; 2/26/25.
- Normal T4 1.8; 8/21/25.
- Weight loss (Overweight)- 0.20 kgs in 9 days (previously 30.7 kgs); 10/24/25. Lost 0.96 kgs in 7 days (previously 30.50 kgs); 10/31/25. Gained 0.86 kgs; 1/9/26. Lost 0.40 kgs in 3 days (previously 30.50 kgs); 1/12/26.
- Heartworm Antigen- Negative; 6/27/23.

Recommended Diagnostics:

- A Holter monitor (24 hour ECG) can be considered given new VPCs but with careful consideration to mobility/comfort. .

Anesthesia:

- Anesthesia is not without risks given patient age. While age is not a disease and cardiac disease moderate, there is a risk of impaired recovery due to senescence alone (risk of complications up to 20%). With this understanding, anesthesia can be pursued. There is always a small risk associated with any anesthetic episode. Recommendations for pre-operative sedation include an opiate (such as butorphanol) combined with a benzodiazepine (such as midazolam or diazepam). Etomidate or alfaxalone are preferred induction agents. Propofol can be considered for induction; however, is less preferred, given an inherent higher risk for worsening systolic function than aforementioned agents. Sevoflurane is the inhalant anesthetic of choice for cardiac patients; however, with proper administration and monitoring, isoflurane is an acceptable choice as well. Ketamine should be avoided. Atropine should be used as needed for blood pressure support in conjunction with bradycardia. Full cardiac precautions should be taken with regards to monitoring (ideally CO2, pO2, ECG, and BP monitoring) and judicious IV fluid administration (avoid volume overload or underload/hypotension - 2 mL/kg/hr surgical fluid rate is recommended).
- Ideally, pimobendan frequency should be increased to every 8 hours for 3 days before and after anesthetic event, then continued every 12 hours thereafter.

Recheck:

- Recheck echo in 6-9 months.
- Senior panel (CBC, Chem, UA, T4, HW antigen) is recommended annually.
- Consider Holter monitor.

Medications:

- Pimobendan (Vetmedin) 5 mg tablets: Give 1.5 tablet(s) (7.5 mg) by mouth every 12 hours.
- Ensure year-round heartworm prophylaxis.
- Non-cardiac medication(s) should be administered as directed by your primary veterinarian.
- Continue antibiosis therapy as recommended by primary veterinarian. Consider restarting Entyce and Cerenia tomorrow at the X-ray appointment.

Monitoring:

- Activity: Continue current activity, avoid strenuous activity.
- Monitor for: Monitor resting respiratory rate at home while the pet is sound asleep. Count the respirations per minute (number of times the chest moves in and out per minute; in and out being one breath) while sound asleep. Normal resting respiratory rates in animals will be between 10-30 breaths per minute or less (ideally in the teens or low 20s). Veterinary care should be sought if a progressive increase in the respiratory rate or if the rate increases above 40. If sudden and severe changes are noted please take pet to the nearest emergency room. Also monitor for: respiratory distress, labored breathing, abdominal swelling, decreased appetite, vomiting, weakness, collapse, seizure-type activity, new or excessive coughing, or severe lethargy. Seek veterinary care if any of these clinical signs are observed.

Diet:

- As directed by primary veterinarian.
- Purina can be continued.
- Dog foods containing pulses (dry seeds of leguminous plants)/alternative carbohydrates sources (legumes such as legumes, chickpeas and lentils, peas, beans, sweet potatoes) may potentially be associated with heart disease in dogs. There may be a relation between such diets and heart disease in dogs, characterized by dilation and loss of pumping ability of the heart, resembling a condition called dilated cardiomyopathy. In some dogs diagnosed with such heart disease, dietary modification and supplementation with an amino acid known as taurine lead to reversal of heart enlargement and improvement in pumping ability. However, this is not guaranteed in all dogs and may have also been related to medication regime and genetics. A peer-reviewed study in October of 2023 demonstrated no such association but cautioned that further investigation is still needed. As such, the current recommendation for pet owners is to choose a diet approved by the World Small Animal Veterinary Association (WSAVA). These diets

undergo rigorous quality control and have not been implicated thus far in dietary-induced cardiomyopathy.
- If diet elected is not WSAVA approved or considering a balanced home-cooked diet, or for more general information, several websites are listed below: Tufts Petfoodology: www.petfoodology.orgTufts HeartSmart website: https://heartsmart.vet.tufts.edu/nutrition/WSAVA Nutrition Toolkit: https://wsava.org/global-guidelines/global-nutrition-guidelines/ and for homecooked diets: Balance It: www.balanceit.com.
- For taurine supplementation, these brands are currently recommended: Pet-Ag, NOW, Solgar, Twinlab. *Summarized from ACVIM Forum Proceedings June 5-8, 2019 and June 2022 and updates from ACVIM June 2024* Please see statements from the FDA as updates are provided regarding this matter: https://www.fda.gov/animal-veterinary/news-events/fda-investigation-potential-link-between-certain-diets-and-canine-dilated-cardiomyopathy.
- Consider supplementation if a diet containing alterative carbohydrates/pulses is fed. Give 50 mg/kg of taurine by mouth every 12 hours. For taurine supplementation, these brands are currently recommended: Pet-Ag, NOW, Solgar, Twinlab.

Summary and Recommendations

- The echocardiogram performed yielded findings consistent with moderate degenerative valve disease (DVD) which can affect the valves between the atrium (upper chamber) and ventricle (lower chamber) of the right and left sides of the heart. The valve on the left side is known as the mitral valve, whereas the valve on the right side is termed the tricuspid valve. Currently, Cheyenne is moderately affected (ACVIM B2). DVD is caused by acquired degeneration or thickening of the mitral valve and/or tricuspid valves that results in back flow, or regurgitation, across the valve (causes a "leaky" valve). This regurgitation often causes an audible heart murmur. DVD is the most common acquired cardiac disease in dogs and is typically a slowly progressive disease. At this time Cheyenne’s DVD is classified as moderate with evidence of moderate mitral valve regurgitation, mild tricuspid valve regurgitation and secondary enlargement of both the left atrium and left ventricle. Echo findings today are nearly identical to the findings from May of 2025 with very mild improvement is pump function and potentially mild progression in left atrial size (subjective).
- DVD occurs as a result of genetic determinants rather than dietary factors or lifestyle. It is the most common type of cardiac disease identified in dogs and is typically diagnosed in adult or geriatric patients. DVD can be progressive, and accordingly recheck echocardiograms are recommended to monitor changes in heart size and function over time.
- Cheyenne’s DVD is moderate and there is an indication for cardiac medications at this time. There has been a study completed (the EPIC study) that has shown that a medication called pimobendan is beneficial at this stage of disease. Pimobendan helps the heart to pump stronger and has been shown to delay the onset of CHF by approximately 8-15 months and current dose will be continued. We may consider escalation should we see progression in the future. Because DVD can be a progressive disease, periodic monitoring is needed and Cheyenne’s next echocardiogram should be performed in 6-9 months.
- During Cheyenne‘s echocardiogram, the electrocardiogram (ECG) showed irregular heartbeats. The normal heart beat, or electrical impulse that stimulates the heart to beat, arises from the SinoAtrial (SA) node located in the right atrium. Occasionally, electrical impulses arise from areas in the heart other than the SA node, and create an electrical impulse to stimulate the heartbeat in an irregular manner. Cheyenne's abnormal beats arise from the bottom chambers of the heart called the ventricles, and are called ventricular premature complexes (VPCs). VPCs can be caused by primary heart muscle disease, a primary electrical disorder, or can be caused by diseases elsewhere in the body (e.g., metabolic disease, abdominal tumors). When VPCs occur one at a time they do not pose a threat, however, when numerous VPCs occur in succession and at rapid heart rates, this is called ventricular tachycardia (VT), which can be fatal. During VT the heart is incapable of pushing enough blood forward to the body, decreasing oxygen delivery to the organs, including the brain, and causing fainting or collapse and possibly sudden death. The arrhythmias recorded during the echocardiogram occurred in a frequency and pattern that is not considered to represent a high risk of sudden death (occasional single complexes only and given breed where many labs have benign VPCs). However, more significant or dangerous arrhythmias at other times of the day cannot be ruled out entirely (unlikely). For this reason, we recommend performing a 24-hour Holter monitor (ECG device worn at home while doing normal activity) if you want to know for sure but being mindful of Cheyenne's mobility (it may be uncomfortable). This recording would help to assess the number of abnormal beats and the risk of developing a more dangerous arrhythmia (sudden death). The echocardiogram will also need to be checked periodically for progressive muscle changes in the heart. The risk of malignant VPCs is lower in Cheyenne given her breed without the Holter monitor.

Electronically Signed:

Carley Saelinger, VMD, DACVIM (Cardiology)
Wed May 27 2026 10:40:07 AM

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www.cardiacvet.com
info@cardiacvet.com

2D Measurements		
LA SAX	52.73	mm
Ao Diam SAX	23.90	mm
LA SAX:Ao SAX	2.21	
IVSd	14.12	mm
LVIDd	50.00	mm
LVPWd	12.75	mm
LVIDs	37.12	mm
LVIDDn	1.83	
LVIDSn	1.26	
Visser Normalized LVIDd	1.70	95 CI 1.14-1.61
Visser Normalized LVIDs	0.97	95 CI 0.56-0.93
% FS 2D	26	%

TDI		
Lateral E`	0.14	m/s
Lateral A`	0.12	m/s

Doppler Measurements - Mitral Valve		
MR V Max	5.3	m/s
MR Max PG	112.4	mmHg

Doppler Measurements - Tricuspid		
TR V Max	2.65	m/s
TR Max PG	28.09	mmHg
RVESP	28.09	mmHg

Doppler Measurements- Aortic Valve		
Ao V Max	1.14	m/s
Ao Max PG	5.20	mmHg

Doppler Measurements - LVOT		
LVOT Velocity	0.98	m/s
LVOT PG	3.84	mmHg

Doppler Measurements - Pulmonary		
PV V Max	1.39	m/s
PV Max PG	7.73	mmHg

Doppler Measurements - RVOT		
RVOT Vel	0.71	m/s
RVOT PG	2.02	mmHg

Study Screen Shots