

Radiograph consult (up to 3 views) 72 hours.

Name	SAMPLE BEAU	MRN	701-BEAU	Date	6/30/2023
Breed	Maltese.	Species	Canine.	Sex	M - Neutered.
DOB	06/28/2010	Weight	6.95 kg		
rDVM	Sample Pet Hospital.				

Observations

Presenting Complaint (rDVM provided):

06/11/23 - pet presented for echocardiogram due to recent CHF episode. Patient was started on spironolactone 25 mg (1/2 tab PO BID and pimobendan 10 mg/mL compounded liquid (3 mg PO BID). It took about 1-2 weeks for pharmacy to fill pimobendan and for owner to pick it up. 06/30/23 - pet presented for heavy breathing and for having an episode of gagging/ syncope this evening. SRR up until 6/30 had been 24 - 32. PE: grade 5/6 murmur with mild tachypnea and increased expiratory effort. X-rays showed pulmonary venous congestion and interstitial hilar pulmonary edema consistent with CHF. A pulmonary bulla was noted in the left cranial lung lobe. Antech report is attached. The same X-rays are submitted again here for cardiologist recommendations. Patient was hospitalized for oxygen support and IV furosemide (0.5 mg/kg/hr). Patient has responded well to furosemide and will be discharged today. Furosemide dosage increase to 1.5x 12.5 mg Salix tablet BID.

Source of Diagnostic studies/images provided for interpretation:

rDVM.

Ancillary Diagnostics:

- 3 VIEW THORACIC RADIOGRAPHS (L, R LATERALS, VD PROJECTIONS) 6/30/23.
- 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.
- Mild, unstructured right caudal dorsal pulmonary pattern and perihilar infiltrates, consistent with decompensated L CHF.
- Additionally, 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.
- The pulmonary veins are modestly distended. Remaining pulmonary vasculature is normal in appearance.
- Identification microchip present.
- The gastric body contains heterogeneously opaque ingesta.
- Cranial abdominal detail is adequate.
- Gastric axis shifting, indicates hepatomegaly.

Diagnosis:

- Degenerative Valve Disease; ACVIM B2: mod MR, mild LVEH, normal systolic function, mild to mod LAE, 8/2/21. Mildly progressive - mild/mod LVEH, mild/mod LAE, mod MR, normal systolic function, trace TR, 2/12/22. Static, mild PI noted, 3/26/23. Progressed, ACVIM C, moderate LVEH, moderate to severe LAE, restrictive diastolic function, normal systolic function, mild TR, normal right heart size, possible ruptured chordae tendinea of the anterior leaflet; 6/13/23.
- Left-sided congestive heart failure (CHF) - pulmonary edema on radiographs, initiated furosemide; 6/6/23. Decompensated, mild pulmonary infiltrates, 6/30/23.
- Pulmonary hypertension (PHT), mild; 6/13/23.
- Systemic hypertension, 195 mmHg; 2/22. BP 130-140 mmHg; 3/22. BP 140 mmHg; 4/22. BP 132-138 mmHg; 6/22.
- Elevated ALKP (2441), 1/22. ALKP (4259), 6/22.
- Seizures, 2/22.
- Adrenal mass, 2/22.
- Elevated urine cortisol:creatinine level, 6/22.
- Syncope, 6/30/23.
- Weight loss, 0.81 lbs since 2/12/22.
- Hepatomegaly on radiographs; 6/6/23.
- LDDST borderline hypoadrenocorticism; 6/22.

Medications:

- ****MAINTAIN higher dose**** Furosemide (Lasix) 12.5 mg tablets: Give 1.5 tablet(s) (18.75 mg) by mouth every 12 hours.
- ****INCREASE**** Pimobendan 10 mg/mL compounded liquid: Give 0.4 ml (4 mg) by mouth every 12 hours.
- ****START if no to mild azotemia**** Benazepril 5 mg tablets: Give 1/2 tablet(s) (2.5 mg) by mouth every 12 hours.
- Spironolactone 25 mg tablets: Give 1/2 tablet(s) (12.5 mg) by mouth every 12 hours.
- Amlodipine 2.5 mg tablets: Give 1/4 tablet (0.625 mg) by mouth every 12 hours.
- Tussigon (5 mg hydrocodone/1.5 mg homatropine) tablets: Give 1/4-1/2 tablet(s) (1.25-2.5 mg hydrocodone/0.375-0.75 mg homatropine) by mouth every 8-12 hours as needed for cough

suppression.

- Zonisamide 50 mg capsules: Give 1 capsule (50 mg) by mouth every 12 hours as previously directed.
- Leviteracitam 500 mg tablets: Give 1/2 tablet (250 mg) by mouth every 8 hours as previously directed.

Recommended Diagnostics:

- Renal panel with electrolytes is recommended if not already performed.

Recheck:

- Recheck renal values (vs full senior panel if not recently performed) and thoracic radiographs in 1-2 weeks.
- Recheck NIBP is recommended if not already performed due to amlodipine therapy and recent CHF.
- Recheck echo in 3-4 months.

Anesthesia:

- Anesthesia is not recommended.

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). Notify a veterinarian if you observe 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:

- Boutique brand dog foods, foods with exotic ingredients (i.e. legumes, peas, kangaroo, alligator, etc), alternative carbohydrates (legumes such as chickpeas and lentils, peas, potatoes, sweet potatoes) and grain-free pet diets (all collectively termed "B.E.G." diets) have become popular over the past several years. However, correlation has been made 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 many dogs diagnosed with such heart disease, dietary modification and supplementation with an amino acid known as taurine can lead to reversal of heart enlargement and improvement in pumping ability. However, this is not guaranteed in all dogs. Progressive enlargement of the heart can lead to congestive heart failure, cardiac arrhythmias, or even cardiac death. As such, the current recommendation for pet owners is to choose a diet approved by the World Small Animal Veterinary Association (WSAVA). Approved manufacturers include: Purina (most formulas), Hills (Science Diet), Royal Canin, Eukanuba. These diets undergo rigorous quality control and have not been implicated thus far in dietary-induced cardiomyopathy.
- If you elect not to feed a diet from the above list, if you'd like to consider a balanced home-cooked diet, or for more general information, several websites are listed below: Tufts Petfoodology: www.petfoodology.org, Taurine DCM website: www.taurinedcm.org, Tufts HeartSmart website: <https://vetmed.tufts.edu/heartsmart/>, WSAVA Nutrition Toolkit: <https://www.wsava.org/Guidelines/Global-Nutrition-Guidelines>. Homecooked diets: Balance It: www.balanceit.com, American College of Veterinary Nutrition: <http://www.acvn.org/directory/For> taurine supplementation, these brands are currently recommended: Pet-Ag, NOW, Solgar, Twinlab*Summarized from ACVIM Forum Proceedings in Phoenix, AZ, June 5-8, 2019*Please see the June 27, 2019 release regarding this matter from the FDA:<https://www.fda.gov/animal-veterinary/news-events/fda-investigation-potential-link-between-certain-diets-and-canine-dilated-cardiomyopathy>.
- Consider supplementation if a BEG diet 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.

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. A physical exam of the patient was not performed.
- 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.

Summary and Recommendations

- Mild, decompensated left-sided congestive heart failure (CHF) is present on chest x-rays. For this reason, higher dose of furosemide should be maintained and pimobendan escalated.
- Benazepril is recommended if there is no to mild azotemia as it helps to blunt the hormones of fluid retention. Patients with cardiac disease develop increased circulating levels of these factors due to an overall reduction in cardiac output. The hormones promote retention of fluid and sodium via the kidneys. In a dehydrated patient, this is protective and helps to maintain a normal blood volume. However, in a patient with heart disease, it is counterproductive and increases the workload on the heart. Accordingly, medications are used to blunt this response. Benazepril can cause increases in renal values. Accordingly, it will be necessary to recheck a kidney panel in 1-2 weeks.
- Cardiac syncope is most commonly seen with congestive heart failure (CHF), vasovagal syncope, pulmonary hypertension, cardiac tamponade, outflow obstructions and significant arrhythmias (brady and tachy). Syncope reported is likely due to CHF and should resolve with therapy. If persistent, echo should be rechecked sooner.

Electronically Signed:



Carley Saelinger, VMD, DACVIM (cardiology)
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