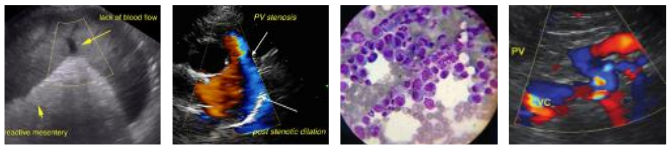
SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™



SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT

Bentley Birdsong

SPECIES

Canine

BREED

Pomeranian Mix

SEX

Neutered Male

AGE

7 Years

WEIGHT

10 Pounds

INTERPRETED BY

Lisa Carioto, DVM, DVSc, Diplomate ACVIM

IMAGING PERFORMED BY

Jessica Miller

HOSPITAL NAME

Warren AH

REFERRING VET

Dr. Nicole

INVOICE

16214

DATE

6/21/22

PRESENTING CLINICAL SIGNS

History: Several week history of coughing. Grade III/VI murmur. Enlarged heart. Current meds: Furosemide 12.5mg 1/2 tab SID

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.3	28-40	40-100	<0.6
PATIENT	4.52	0.96	1.30	NM	44.44	77.77	0.18
CANINE CARDIAC PARAMETERS	**HR** (BPM)	**AV VMAX** (m/s)	**PV MAX** (m/s)	**BODY WEIGHT** (kg)	**LA** 2D short axis Base view (cm)	**LVIDd** Avg; 2D and m-mode short axis (cm)	**LVIDs** Avg; 2D and m-mode short axis (cm)
NORMAL PARAMETER	50-100	0.7-1.7	0.7-1.6				
PATIENT	77	0.81	0.81	4.54	2.68	2.54 long	1.41 long

Echocardiographic findings

Mitral valve

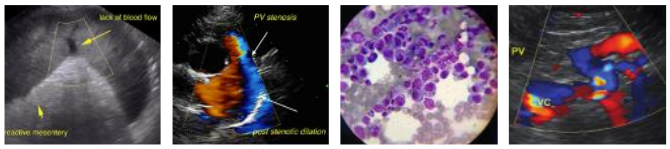
- Mild (posterior) to moderate to marked (septal) myxomatous degeneration of both leaflets.
- Moderate prolapse. The septal leaflet is more severely affected compared to the posterior leaflet.
- Marked mitral regurgitation.
- LA: Ao ratio: high normal (receiving furosemide)
- LA normalized for BW (LAN = 1.6); moderate
- LVIDd normalized for BW (LVIDND = 1.6); high normal
- LVIDs normalized for BW (LVIDNs = 0.88); within normal limits (WNL)

Aortic valve

- Mild thickening and irregularity of the leaflets, without signs of vegetative lesions.
- Trivial aortic insufficiency

Tricuspid valve

- Mild myxomatous degeneration of the tricuspid valve
- Mild prolapse of posterior leaflet.



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- Moderate tricuspid regurgitation.
- No right ventricular or atrial enlargement.

Pulmonic valve

- No abnormalities
- No pulmonary insufficiency.
- Main pulmonary artery within normal limits.

Other

- No signs of pericardial or pleural effusion
- No evidence of pulmonary edema.
- No obvious signs of a mass.
- "Sludge" in gallbladder

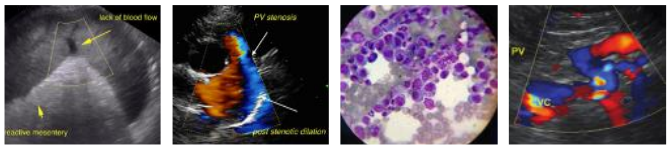
ULTRASONOGRAPHIC FINDINGS

- Myxomatous degeneration of the mitral (moderate to marked) and tricuspid (mild) valves, ACVIM stage C (i.e. failure assumed if currently on furosemide). Moderate left atrial enlargement is present while the left ventricle is at the high end of the normal reference range. These findings are noted with the administration of furosemide.
- Treatment for congestive heart failure is recommended (see below).
- Aortic insufficiency, likely secondary to age-related valvular changes, i.e. endocarditis is not noted.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Suggestions/recommendations for Bentley include:

- Evaluation of arterial blood pressure
- Treatment with pimobendan (Vetmedin) at 0.25-0.30 mg/kg PO every 12 hours. Ideally, the dose should be started at 0.10 mg/kg PO every 12 hours for 3 days prior to increasing to the full dose to decrease the risk of GI side effects. Administer with a *small* amount of food to decrease nausea.
- furosemide - Administer 0.5 mg/kg twice a day for 5 days, then decrease the dose to once a day for 5 days. Find the minimum dose effective in controlling clinical signs, including the cough. Weaning of the dose may not be possible.
- spironolactone (0.5-1 mg/kg twice a day) is helpful in decreasing the dose of furosemide required to control one's cough and is potassium sparing. It also has anti-fibrotic effects. This may be started in approximately 5-7 days, i.e. ensure Bentley is tolerating the pimobendan prior to starting it.



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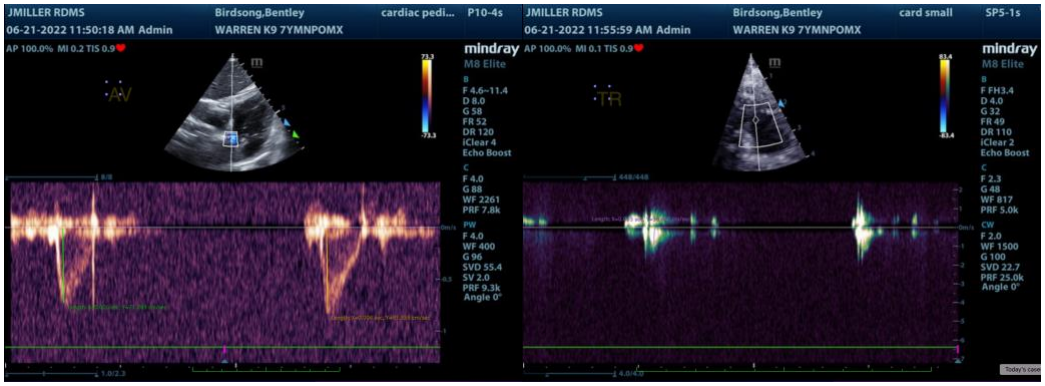
- benazepril (Fortekor). In approximately 7 to 10 days, treatment may be started. For example, 0.25 mg/kg PO every 12 hours for 3 days, then 0.25 mg/kg PO every 12 hours thereafter. If more convenient and tolerated, the dose may be adjusted to 0.5 mg/kg PO once a day.
- An antitussive, codeine or hydrocodone, may help control the cough if the latter is not associated with pulmonary edema, i.e. inflammation due to compression of the mainstem bronchus due to left atrial enlargement.
- Monitoring of the resting (sleeping) respiratory rate (RRR) is highly recommended once a day. The RRR should NOT EXCEED 30 breaths per minute (bpm). If the respiratory rate is greater than 30 bpm, <u>or</u> if there is a gradual increase (over a day or two) toward 30 bpm, the patient should be evaluated immediately for congestive heart failure and the appropriate treatment initiated.
- Other clinical signs clients should monitor for include coughing (particularly at night), fatigue, lethargy, decreased exercise tolerance (i.e., not being able to walk for as long before becoming tired, or "running out of breath" while playing, or going up and down stairs, as well as syncope (collapsing or fainting spells). Restlessness, or agitation during the night, or being unable to find a comfortable position to sleep are also very common clinical signs.
- Moderate salt restriction is suggested (between 0.4-0.5 grams/1000 kcal of food). Monitor salt content in treats.
- Blood work PCV/TS, renal profile, SDMA and arterial blood pressure, are recommended 10-14 days after initiation of spironolactone.
- Blood work, CBC, serum biochemical profile, including a SDMA, and arterial blood pressure, are recommended at least twice a year to monitor renal parameters.
- Re-evaluation of an echocardiogram is suggested in 6 months, or sooner depending on clinical signs.



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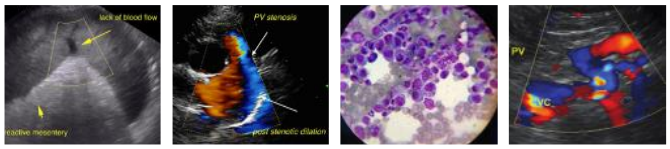

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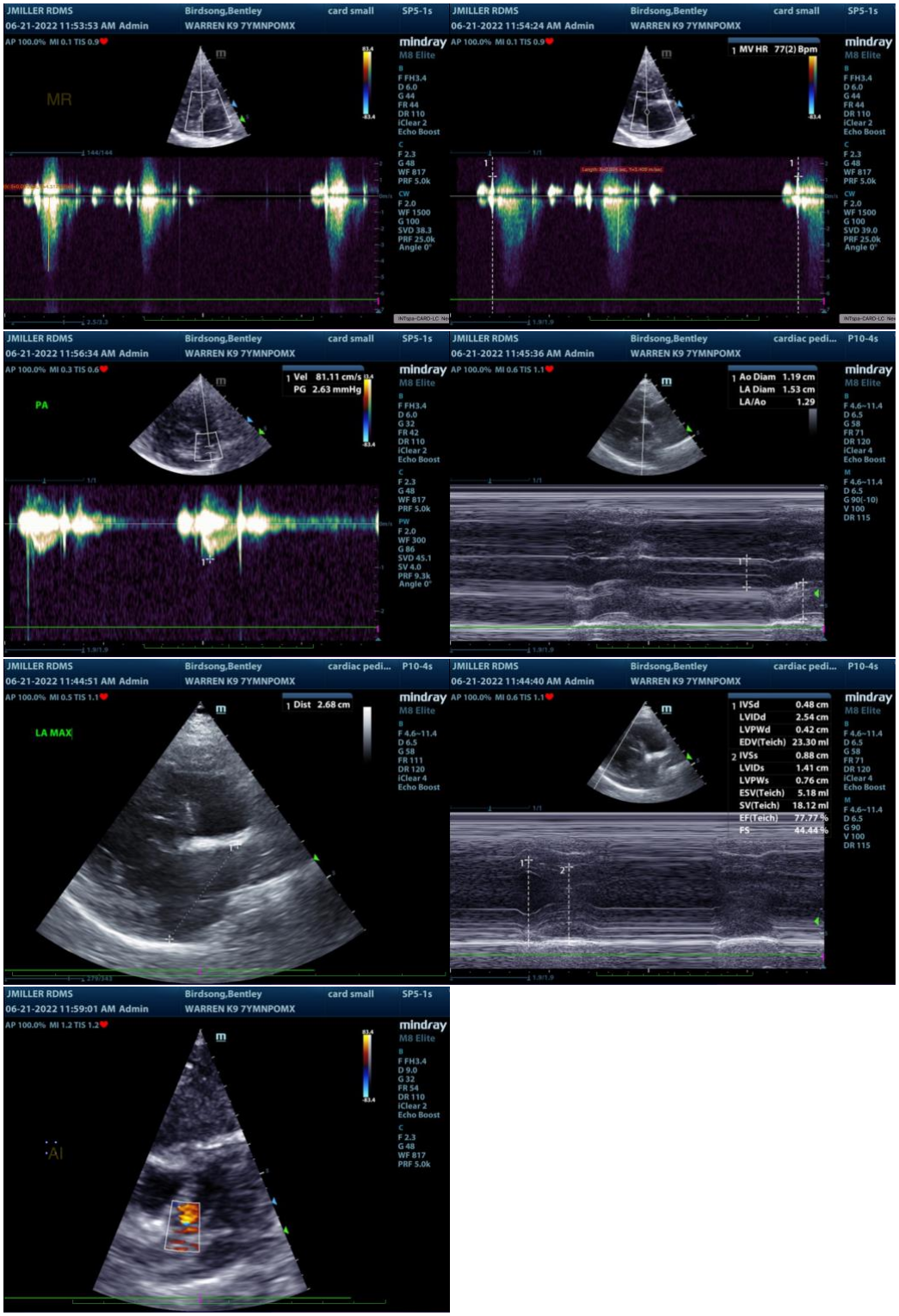

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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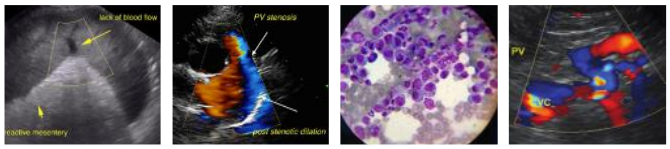

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Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance please contact me.

Lisa Carioto, DVM, DVSc, Diplomate ACVIM

Lisa.Carioto@sonopath.com