



**PATIENT PRESENTING CLINICAL SIGNS**

Brandy Gerand History: not herself, no energy, not interested in food. On auscultation, heart sounds muffled on left side. R/O possible heart issue

**SPECIES**

Canine

**ULTRASONOGRAPHIC EXAMINATION OF THE HEART**

**BREED**

Border Collie	<b>CANINE</b>	<b>MR</b>	<b>TR</b>	<b>LA/AO</b>	<b>LA/AO</b>	<b>FS</b>	<b>EF</b>	<b>EPSS</b>
	<b>CARDIAC</b>	<b>VMAX</b>	<b>VMAX</b>	(Boon method)	(Heart Base; Swedish)	(%)	(%)	(cm)
	<b>PARAMETERS</b>	(m/s)	(m/s)					
Spayed Female	<b>NORMAL PARAMETER</b>	4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
	<b>PATIENT</b>	1.34	1.56	1.12	1.19	32	N/E	0.25
	<b>CANINE</b>	<b>HR</b>	<b>AV</b>	<b>PV</b>	<b>BODY WEIGHT</b>	<b>LA</b>	<b>LVIDd</b>	<b>LVIDs</b>
9 years	<b>CARDIAC</b>	(BPM)	<b>VMAX</b>	<b>MAX</b>	kg	2D long axis Base view	Avg; 2D and m-mode short axis	Avg; 2D and m-mode short axis
	<b>NORMAL PARAMETER</b>	50-100	0.7-1.7	0.7-1.6				
	<b>PATIENT</b>	111	1.46	0.59	19.1	3.53	3.71	2.51
Adapted from June Boon, Veterinary Echocardiography, 1998 Sisson D et al. JVIM 1991; 5: 232, and Jacobs et al. Am J Vet Res 1985; 46:1705								

**INTERPRETED BY**

Lisa Carioto, DVM, DVSc, Diplomate ACVIM

**Echocardiographic findings**

- **Mitral valve:** Trivial myxomatous degeneration of both leaflets. The anterior leaflet is very mildly more affected compared to the posterior leaflet.
- Very mild prolapse of septal leaflet.
- Very mild mitral regurgitation.
- No left auricular enlargement.
- LA: Ao ratio within normal limits
- LA normalized for BW (LAN = 1.29); mildly to moderately enlarged left atrium
- LVIDd normalized for BW (LVIDND = 1.6); high normal
- LVIDs normalized for BW (LVIDNs = 0.99); within normal limits
- **Aortic valve:** very mild thickening and irregularity of the leaflets
- Very mild aortic insufficiency, with rapid velocity (2.04 m/s)
- **Tricuspid valve:** Very mild myxomatous degeneration of the posterior leaflet tricuspid valve
- Very mild prolapse of posterior leaflet.

**IMAGING PERFORMED BY**

Diane McFadden, RVT

**HOSPITAL NAME**

All Creatures Great and Small Denville

**REFERRING VET**

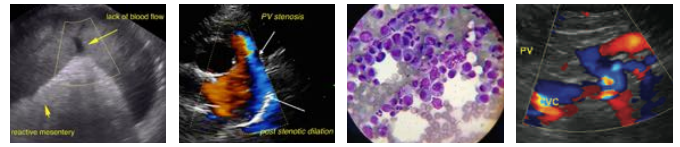
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**INVOICE**

30480

**DATE**

5/17/22



**PATIENT**

Brandy Gerand

**SPECIES**

Canine

**BREED**

Border Collie

**SEX**

Spayed Female

**AGE**

9 years

**WEIGHT**

**INTERPRETED BY**

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- Very mild to mild tricuspid regurgitation (two jets)
- No right ventricular or atrial enlargement.
- *Pulmonic valve*: no abnormalities.
- Trivial pulmonary insufficiency.
- Pulmonary artery: aortic ratio = 0.95 (high normal).
- Main pulmonary artery is mildly dilated (subjectively), however, the individual pulmonary arteries appear within normal limits.
- No signs of heart worm.
- No signs of pericardial or pleural effusion
- No evidence of pulmonary edema.
- No obvious signs of a mass.
- The myocardium of the left ventricular free wall is mildly to moderately hyperechoic, including both papillary muscles.

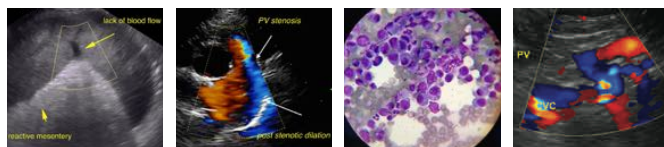
**ULTRASONOGRAPHIC FINDINGS**

- Very mild myxomatous degeneration of the mitral and tricuspid valves, ACVIM stage B2, with mild to moderate left atrial enlargement. The left ventricle is less than 1.7, i.e., it does not meet the EPIC study criteria.
- Subjectively, the myocardium of the left ventricular free wall and papillary muscles is mildly hyperechoic, which may be suggestive of inflammation, i.e. myocarditis.
- Mildly dilated main pulmonary artery of unknown etiology; underlying causes are not identified on Brandy's echocardiogram. Although obvious pulmonary hypertension is not confirmed sonographically, consider evaluating for primary pulmonary/respiratory disease.
- An intermittent arrhythmia cannot be excluded as a contributing factor to Brandy's clinical signs.
- Differential diagnoses to consider include hypoadrenocorticism.
- Treatment with pimobendan is suggested even though Brandy's results do not meet all the criteria of the EPIC study (see below).

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Suggestions/recommendations include:

- Consider SNAP 4Dx and PCR for tick borne diseases, and leptospirosis depending on travel history and Prevalence of infectious diseases in your area.
- Fundic exam
- Baseline (random) cortisol
- Breed-associated hypcobalaminemia
- Evaluation of blood pressure



**PATIENT**

Brandy Gerand

- Thoracic radiographs to evaluate lungs
- Deworm with fenbendazole for 14 days
- Trial with analgesics
- An abdominal ultrasound may be considered depending on Brandy's response to the above.
- Evaluate Brandy's diet (grain free, all meat diet, etc.)

**SPECIES**

Canine

Other suggestions include

**BREED**

Border Collie

- Treatment with pimobendan at 0.25-0.30 mg/kg PO every 12 hours, however, 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 help decrease the risk of GI upset. Administer with a small amount of food to decrease nausea.

**SEX**

Spayed Female

- 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, or 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.

**AGE**

9 years

- 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.

**WEIGHT**

- Mild salt restriction is suggested (less than 0.9 grams/1000 kcal of food)

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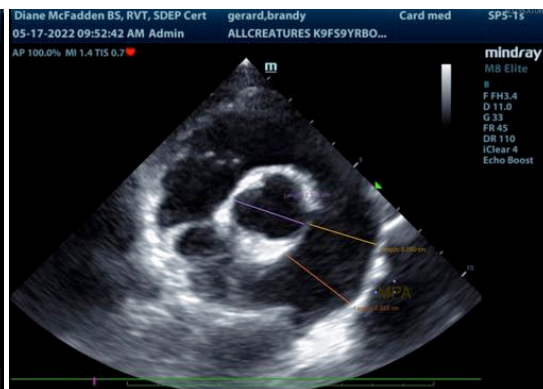
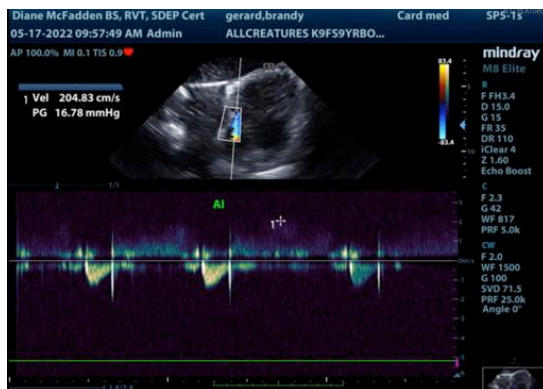
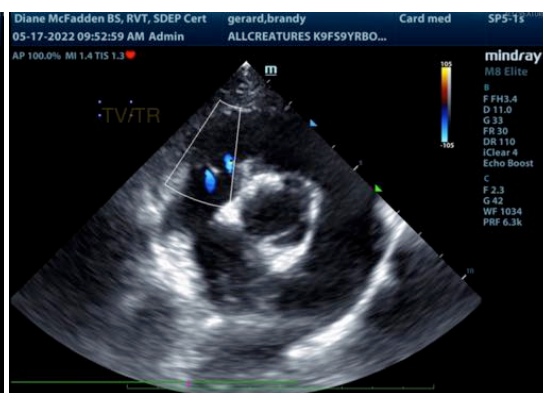
Dr. Mitrovic

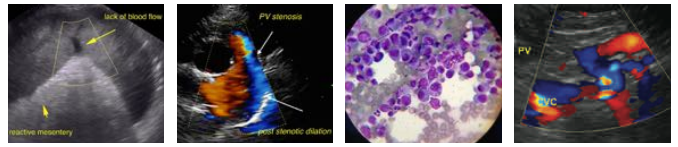
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**PATIENT**

Brandy Gerand

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.

**SPECIES**

Canine

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.

**BREED**

Border Collie

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**SEX**

Spayed Female

**AGE**

9 years

**WEIGHT**

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