



PATIENT PRESENTING CLINICAL SIGNS

Bambi Burgess

History: Grade III/VI murmur. Diabetic on vetsulin, advanced PDDZ . Need anesthetic clearance for dental treatment. Current meds: Vetsulin, Gabapentin

SPECIES

Canine

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

BREED

Chihuahua

SEX

Spayed Female

AGE

12 years

WEIGHT

12.4 lbs

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swedish)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
PATIENT	5.50	1.72	1.63	1.42	36-41	66% w/FS of 36%	0.24
CANINE CARDIAC PARAMETERS	HR (BPM)	AV VMAX (m/s)	PV MAX (m/s)	BODY WEIGHT kg	LA 2D long axis Base view	LVIDd Avg; 2D and m- mode short axis	LVIDs Avg; 2D and m- mode short axis
NORMAL PARAMETER	50-100	0.7-1.7	0.7-1.6				
PATIENT	153	1.23	0.79	5.64	2.55	1.80	1.02

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

IMAGING PERFORMED BY

Shari Reffi, CVT

HOSPITAL NAME

Shohola

REFERRING VET

Dr. DeMeo

INVOICE

30860

DATE

5/31/22

Echocardiographic findings

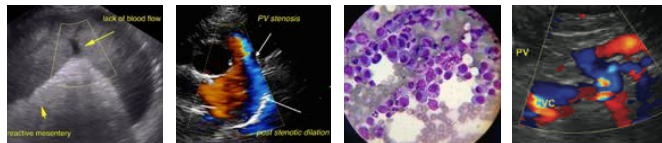
No obvious arrhythmia during the echocardiogram

Mitral valve

- Mild (posterior) to moderate (septal) myxomatous degeneration.
- Moderate prolapse of both leaflets, the septal leaflet is mildly more severe compared to the posterior.
- Severe mitral regurgitation.
- Moderate to marked left atrial enlargement
- Mild to moderate left auricular enlargement.
- Rounding of the interventricular septum, i.e. left ventricular enlargement is present
- M to moderate increase of LA: Ao ratio
- LA normalized for BW (LAN = 1.42); moderate to marked
- LVIDd normalized for BW (LVIDND = 1.80); mild
- LVIDs normalized for BW (LVIDNs = 1.02); within normal limits (WNL)



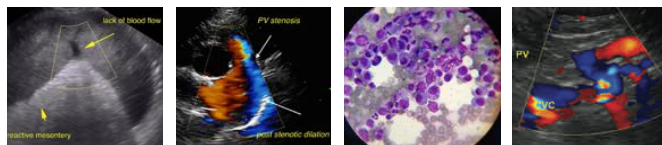
PATIENT	<i>Aortic valve</i>
Bambi Burgess	<ul style="list-style-type: none"> No abnormalities No aortic insufficiency
SPECIES	<i>Tricuspid valve</i>
Canine	<ul style="list-style-type: none"> Mild myxomatous degeneration of both leaflets Mild prolapse of both leaflets (septal worse than posterior). Mild tricuspid regurgitation. No right ventricular or atrial enlargement.
BREED	
Chihuahua	
SEX	<i>Pulmonic valve</i>
Spayed Female	<ul style="list-style-type: none"> No abnormalities No pulmonary insufficiency. Main pulmonary artery within normal limits. Pulmonary artery - bifurcation, no abnormalities. No signs of heart worm.
AGE	<i>Other</i>
12 years	<ul style="list-style-type: none"> No signs of pericardial or pleural effusion Mitral regurgitation fills the pulmonary veins 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.
WEIGHT	
12.4 lbs	
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HOSPITAL NAME	ULTRASONOGRAPHIC FINDINGS
Shohola	<ul style="list-style-type: none"> Myxomatous degeneration of the mitral (moderate) and tricuspid (mild) valves, ACVIM stage B2, with marked left atrial enlargement and mild left ventricular enlargement. There are no obvious signs of congestive heart failure based on the ultrasound findings, however, advanced changes are present. Therefore, treatment with pimobendan (Vetmedin) is recommended to help slow the progression of Bambi's disease.
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Dr. DeMeo	
INVOICE	<u>INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS</u>
30860	Treatment with pimobendan is recommended (see below).
DATE	Other suggestions/recommendations include:
5/31/22	<ul style="list-style-type: none"> Evaluation of blood pressure



PATIENT	<ul style="list-style-type: none"> Treatment with pimobendan at 0.25-0.30 mg/kg PO every 12 hours. If sensitive GI system, the dose should be started at 0.10 mg/kg PO every 12 hours for 3 days prior to increasing to the full dose. Administer with a small amount of food to decrease nausea. 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. Mild salt restriction is suggested (less than 0.9 grams/1000 kcal of food), and ideally between 0.4-0.5 grams/1000 kcal of food). Monitor salt content in treats. Omega-3 fatty acids may be helpful (EPA = 40 mg/kg/day and DHA = 25 mg/kg/day); gradual up-titration of the dose is suggested to decrease risk of gastrointestinal effects. However, they should not be introduced at the same time as pimobendan. Monitoring for progression of heart disease with a re-evaluation of an echocardiogram every 6 to 8 months, or sooner if clinical signs develop, is recommended. If possible (i.e. if not painful), the dentistry should be postponed for approximately 2-4 weeks while initiating therapy with pimobendan, as this will help stabilize the heart prior to the procedure.
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Example of general anesthesia protocol for a dentistry

- Premedication with an opioid, such as hydromorphone, butorphanol, or methadone, +/- low dose of midazolam. Avoid dexmedetomidine (label indications).
- Avoid acepromazine, atropine and glycopyrrolate. The latter two drugs should only be considered if a patient becomes bradycardic during the procedure.
- Preoxygenation for 10-15 minutes (minimum 5 minutes).
- Induction with alfaxalone, or propofol, if alfaxalone is not available. Avoid ketamine, if possible.
- Monitor arterial blood pressure during the procedure. The mean blood pressure should be between 90 - 100 mm Hg. If the patient's blood pressure is decreased, dobutamine is suggested, i.e. fluid boluses should *not* be administered to avoid volume overload and congestive heart failure.
- The intravenous fluid rate should be approximately ¼ of the DAILY maintenance requirements, or 1.75-2 ml/kg/hour to avoid fluid overload.
- Dental blocks are strongly recommended to decrease MAC and the amount of isoflurane necessary, as the latter tends to cause hypotension, particularly in cardiac patients.
- *Two shorter procedures are preferable to performing one long procedure, if the dentistry will take longer than originally expected.
- One could consider sending the patient home with *furosemide in case of an emergency*.
- Monitoring the patient's resting respiratory (breathing) rate twice a day for 4-6 weeks following general anesthesia is suggested to monitor for signs of decompensation of heart disease.



PATIENT

- Do not administer the pimobendan (Vetmedin) the morning of general anesthesia.

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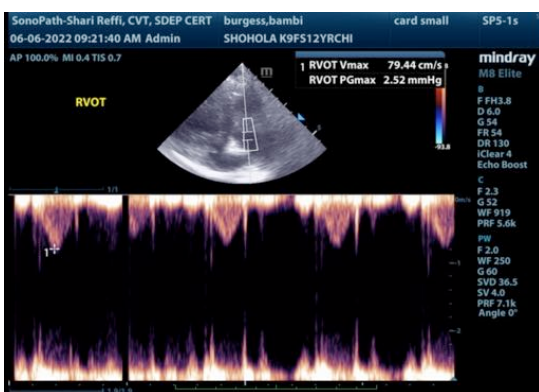
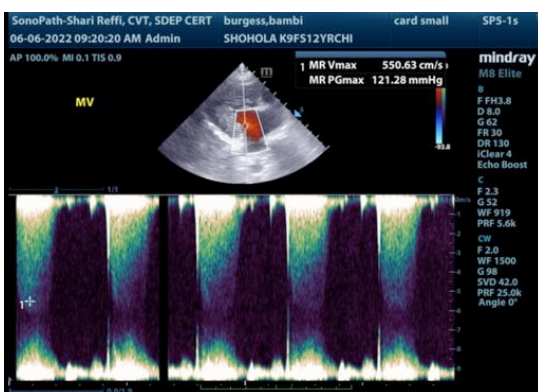
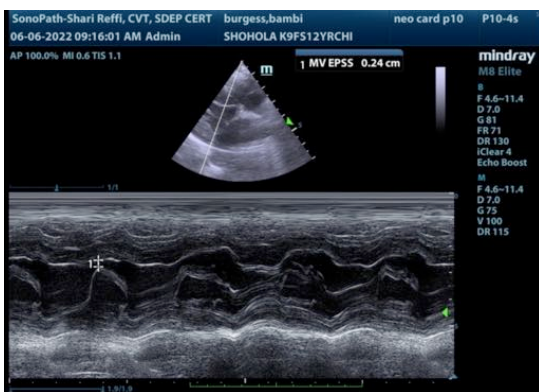
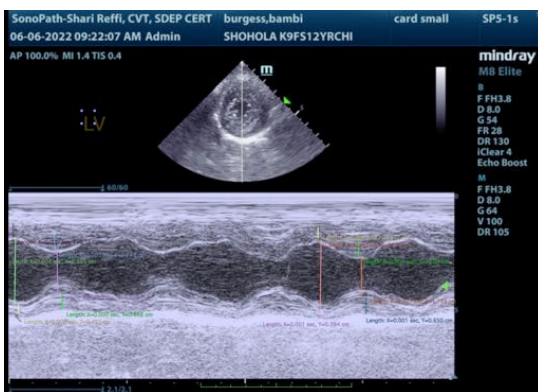
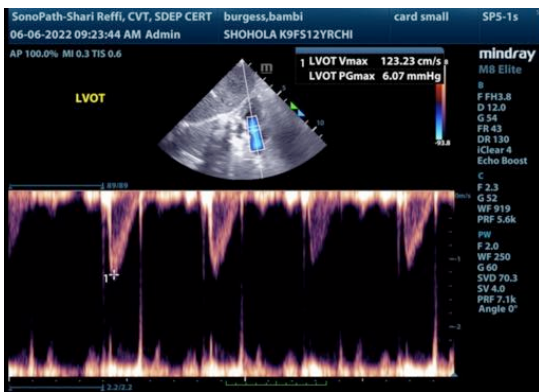
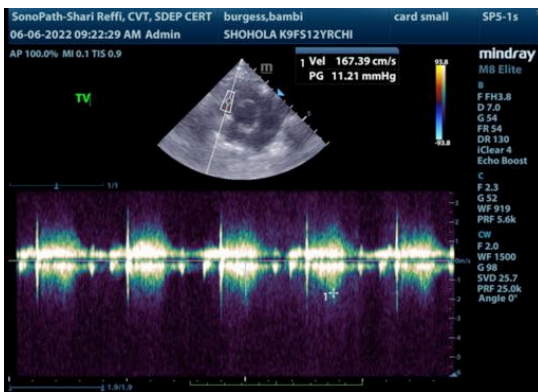
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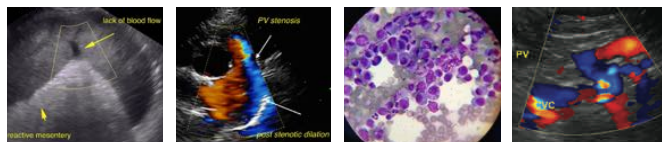
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.



PATIENT

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