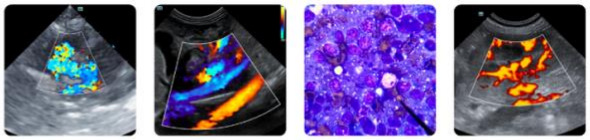


PATIENT

Brandy Byquist

SPECIES

Canine

BREED

Cocker Spaniel

SEX

Spayed Female

AGE

12 Years

WEIGHT

14.3 kg

INTERPRETED BY

James Wood, DVM, DACVIM (Cardiology)

IMAGING PERFORMED BY

Dr. Iacovides

HOSPITAL NAME

Tuxedo AH

REFERRING VET

Dr Lameg

INVOICE

37232

DATE

5/27/26

PRESENTING CLINICAL SIGNS

History: Abdomen is for geriatric screen as amylase and lipase elevated, therefore check pancreas. Has B2 mitral disease. U/S many years ago. Has ventricular arrhythmia that appears well controlled routine monitoring of her heart condition has been lacking due to client cost concerns, so we want to do basic assessment, but we need a dental and tumor removal and are expecting a longer (2hrs to 2 1/2 hrs) sx procedure.

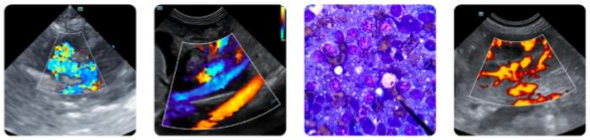
Current meds: 1) Compound (C) Sotalol 20mg/ml Oral GIVE 1 ML BY MOUTH EVERY 12 HRS LONGTERM 2) Compound (C) Pimobendan 3.75mg/ml Oil Oral Give 1ml by mouth every 12 hrs on an empty stomach.

Abnormal PE/Chem/CBC/UA Results: Grade 2-3 heart murmur -typical SSR 20-24 -no syncope -no jugular distension -no cough Ventricular arrhythmia (ECG report attached) CBC-wnl CHEM: ALP 283 u/l (23-212) Amyl 1910 u/l (500-1500) Lipa 3683 u/l (200-1800) UA-wnl.

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

CANINE CARDIAC PARAMETERS	LA long axis	LAmaxN	Ao long axis	LA/AO (Heart Base; Swe, short axis)	LA/AO long axis	LVIDd	LVIDdN
NORMAL PARAMETER		<1.57		<1.6	<2.5		<1.7
PATIENT	3.25	1.43	1.21	1.81	2.69	3.61	1.56
CARDIAC PARAMETERS	**Body Weight (kg)**	**AV VMAX (m/s)**	**PV MAX (m/s)**	**MR VMAX (m/s)**	**TR VMAX (m/s)**	**FS (%)**	**LVIDsN**
NORMAL PARAMETER		0.7-1.7	0.7-1.6			22 - 49%	<0.9
PATIENT	14.3	2.02	1.01	5.7	--	27.2	0.93
CARDIAC PARAMETERS	**HR (bpm)**	**MV E (m/s)**	**MV A (m/s)**	**MV E/A (m/s)**	**EF (%)**	**IVSdN**	**LVFWdN**
NORMAL PARAMETER						<0.6	<0.6
PATIENT	152	--	--	--	--	0.45	0.55

Radiographic Interpretation



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A left lateral and VD thoracic radiograph are available for review. There is generalized cardiomegaly with specific left atrial enlargement. The visible pulmonary vasculature is normal in appearance. The caudal vena cava is subjectively mildly dilated on the lateral projection. The pulmonary parenchyma is within normal limits.

ECG Interpretation

An ECG report is attached and notes an underlying sinus arrhythmia with ventricular ectopy occurring as single monomorphic VPCs. During the echocardiogram, while an ECG is not attached, ventricular ectopy is suspected throughout, including multiple periods of ventricular bigeminy.

Cardiac Presentation

The mitral valve leaflets are mildly thickened with mild central mitral valve insufficiency. Leaflet prolapse is not identified. The left atrium is mildly dilated. The left ventricular and diastolic dimension are normal. There is mild left ventricular systolic dysfunction, subjectively, and based on minor axis fractional shortening. There is normal right atrial size with trace tricuspid regurgitation. There is no prolapse of the tricuspid valve leaflets and no evidence of pulmonary hypertension based upon tricuspid regurgitant velocities. The right ventricle subjectively appears normal in structure and function. The aortic and pulmonary valves have normal appearance and motion, and the corresponding outflow velocities are within normal limits. There is no evidence of pulmonary or aortic valve insufficiency. The aorta appears normal. The pulmonary artery and associated branches appear normal. There is no evidence of pleural effusion, pericardial effusion, or intracardiac masses.

ULTRASONOGRAPHIC FINDINGS

- Myxomatous mitral valve disease, ACVIM, stage B2 (mild LA enlargement, normal LV dimension on pimobendan).
- Mild LV systolic dysfunction
- Ventricular ectopy

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

There is myxomatous mitral valve disease with mild left atrial enlargement and normal LV dimension on pimobendan. This may be a consequence of pimobendan therapy. The pimobendan dose is recommended to be mildly increased, given the LV systolic dysfunction, to a dose of 5 mg PO Q12. The thoracic radiographs reveal no evidence of cardiogenic pulmonary edema and will serve as a baseline before anesthesia. Client should be monitoring sleeping respiratory rates and for signs of coughing as noted in the history.

The ventricular arrhythmia is observed during the echocardiogram today as noted in the ECG report. Single VPCs are suspected with no couplets, runs, or other complexity noted. A Holter monitor would be ideal to determine the burden of ventricular ectopy and determine if dose adjustment is recommended to reduce the risk of sudden death. Otherwise, the dose of sotalol can be continued

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unchanged. A recheck after anesthesia is recommended every 6 months at this stage of disease or sooner if concerns arise.

Monitoring

It is very important to catch any clinical signs concerning for emerging CHF as early as possible. The client should be closely monitoring and ideally tracking the sleeping respiratory rate. The sleeping RR should be between 10-30 breaths per minute or less (ideally in the teens or low 20s). **If the resting RR is trending upward**, consistently>35/min while resting/sleeping AND/OR there is a new or progressive cough, the patient should be seen urgent for evaluation to determine if CHF is developing. *RECHECK ASAP for thoracic radiographs if there is a new cough or increase in RR to detect early CHF and avoid ER presentation**

Sodium Restriction

Mild sodium restriction may be beneficial in managing this stage of cardiac disease. High-salt treats or diets should be avoided. If interested, further information on moderate sodium restricted diets for dogs with advanced cardiac disease can be found at: https://heartsmart.vet.tufts.edu/nutrition/.

Anesthesia

There is a mildly increased risk to anesthesia given the underlying cardiac disease. Anesthesia should only be pursued for medically necessary procedures with client understanding of the risks.

On top of the increased intraoperative risks (hypotension, hypoventilation, hypothermia) with cardiac disease, there is an increased risk of precipitating CHF. With this understanding, anesthesia can be pursued pending normal labwork, with appropriate precautions for strictly necessary procedures. Baseline thoracic radiographs are recommended within 1-2 months of anesthesia, not only to rule out CHF, but to serve as a baseline for comparison if a new cough or other respiratory signs develop after anesthesia. Pimobendan can be given three times daily for 2-3 days prior to and following anesthesia to support cardiac function. The morning dose of any ACEi should be skipped the day of anesthesia.

Recommendations for pre-operative sedation include an opiate (such as butorphanol) combined with a benzodiazepine (such as midazolam or diazepam). It is recommended to avoid alpha 2 agonists, as these agents can cause vasoconstriction and worsen MR, exacerbating left atrial hypertension. These effects persist for hours even after reversal. Etomidate or alfaxalone are preferred induction agents. Propofol can be considered for induction; however, is less preferred to alfaxalone or etomidate. Ketamine should ideally be avoided. Atropine should be used as needed for blood pressure support when bradycardia is present during periods of hypotension.

Full cardiac precautions should be taken with regards to monitoring (ideally CO2, SpO2, ECG, and BP monitoring) and judicious IV fluid administration (avoid volume overload or underload/hypotension – 3-4 mL/kg/hr surgical fluid rate is recommended). All other methods of blood pressure support should be utilized **instead of fluid boluses** (i.e. reduce inhalant/use MAC reducing agents, consider

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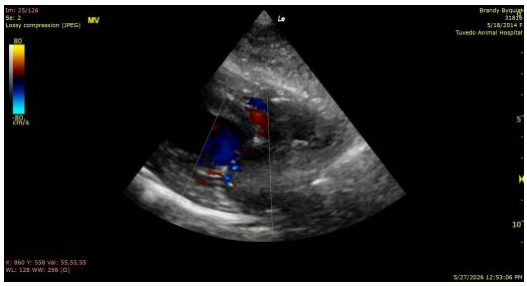
anticholinergics if bradycardia + hypotension), and the use of parenteral inotropes should be considered (i.e. dobutamine or dopamine).

Given the ventricular arrhythmias, close monitoring of the ECG is recommended. Lidocaine should be on hand and used if there are hemodynamically significant ventricular arrhythmias, couplets, triplets, runs, or other complexity noted. If parenteral inotropes such as dobutamine are used, these can increase the frequency of ventricular arrhythmias and close monitoring and caution is recommended.



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.

James Wood, DVM, DACVIM (Cardiology)

info@SonoPath.com