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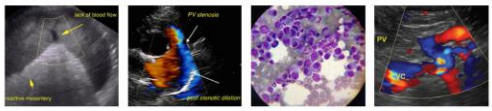

SonoPath
Clinical Sonography & Telecytology
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**PATIENT**
Butters Preston

**SPECIES**
Feline

**BREED**
DSH

**SEX**
Male Neutered

**AGE**
3 years

**WEIGHT**
11lbs

**INTERPRETED BY**
Maggie Machen Lamy, DVM DACVIM (Cardiology)

**IMAGING PERFORMED BY**
Pamela Harrigan, RDCS

**HOSPITAL NAME**
Wood River Animal Hospital

**REFERRING VET**
Dr. Fischer

**INVOICE**
24973

**DATE**
6/24/22

## PRESENTING CLINICAL SIGNS

History: Presented in CHF three weeks ago. Thoracocentesis at that time yielded 400 cc light pink fluid. Started Furosemide 20mg, 1/2-tab QD.

## ELECTROCARDIOGRAPHIC FINDINGS *Note: Single lead ECGs are evaluated as a rhythm strip. Morphology/MEA cannot be definitively commented on.

A single lead ECG is available; 25mm/s (sensitivity not provided). The underlying rhythm is sinus in origin with an average heart rate of 210bpm. P for every QRS complex and vice versa. Periods of marked supraventricular tachycardia; sustained at 380bpm. Occasional single VPCs seen during sinus rhythm.
ECG diagnosis: Normal sinus rhythm with paroxysmal rapid SVT and isolated VPCs.

## ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and Doppler imaging is available.
**Left ventricle:** The LV dimeter is normal with mildly depressed myocardial function. The LV wall thicknesses are irregular with regions of thinning contrasting regions of moderate hypertrophy. The endocardium appears remodeled. The papillary muscles are remodeled and asymmetric.
**Left atrium:** The left atrium and auricle are markedly dilated. Subtle spontaneous contrast is suspected.
**Mitral valve:** The mitral valve is normal in structure and mobility. No systolic anterior motion is seen. Mild central mitral regurgitation.
**Aortic valve/Aorta:** Aortic valve is normal. Normal outflow velocity, laminar flow. No AI.
**Right ventricle:** Right ventricular appears normal.
**Right atrium:** The right atrium is moderately dilated.
**Tricuspid valve:** Tricuspid valve is normal with moderate TR.
**Pulmonic valve/Pulmonary artery**: The pulmonic valve appears normal in morphology and mobility. Decreased pulmonic outflow velocities with laminar flow. No PI.
**Pericardium/other:** Small to moderate volume pericardial effusion. No obvious pleural effusion seen. No obvious cardiac tumors.

**2-Dimensional Measurements**

| | |
|---|---|
| Ao diam (cm) | 0.9 |
| LA diam (cm) | 2.5 |
| LA:Ao (Swe) | 2.8 |
| IVS thickness (cm) | 0.78 |
| LVID diastole (cm) | 1.3 |
| PW thickness (cm) | 0.67 |
| LVID systole (cm) | 0.96 |
| FS (%) | 41 |

**Doppler Measurements**

| | |
|---|---|
| PV Vmax (m/s) | 0.6 |
| AoV Vmax (m/s) | 0.7 |
| MR Vmax (m/s) | NA |
| TR Vmax (m/s) | NA |
| TR PG (mmHg) | NA |

## INTERPRETATION OF THE FINDINGS

Hypertrophic cardiomyopathy (HCM) is a rule out diagnosis, once hyperthyroidism and hypertension have been considered. The severity in this disease would suggest primary disease is present with concurrent right heart enlargement. Regardless, this represents burn out or end-stage pathology with an irregular LV, systolic dysfunction and marked biatrial dilation. The LA is massive enlarged with evidence of smoke, indicating high risk for spontaneous CHF and/or blood clot events. These findings certainly confirm the origin of pericardial effusion is congestive heart failure.

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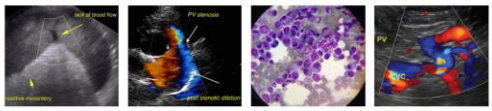

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The ECG confirms development of a rapid arrhythmia, most consistent with a paroxysmal supraventricular tachycardia (SVT). SVT implies a malignant foci within the dilated atrial tissue has begun to fire inappropriately, resulting in a HR of 380bpm. With a rapid arrhythmia, the patient will develop hypotension and active CHF, as is seen in this case. Occasional VPCs are also noted, which may suggest risk for VT as well.

Hospitalization for conversion (IV diltiazem) and overnight supportive care/ECG monitoring is considered the gold standard as this patient is unstable. If this is declined, cautious use of oral anti-arrhythmics and supportive medications can be considered, however risk with this approach should be relayed to the owner. Rapid arrhythmias confer risk for fibrillation and sudden death, and even on medications this remains a possibility. Initiation of full cardiac supportive medications for CHF is recommended as below.

The long-term prognosis is grave even with medications; however, our goal is to stabilize the patient and maintain a good quality of life for some time (weeks to months). If the patient cannot tolerate medical management of heart disease and/or QOL is suffering, humane euthanasia may have to be considered. There will always remain risk for episodes of CHF and development of blood clots in the future.

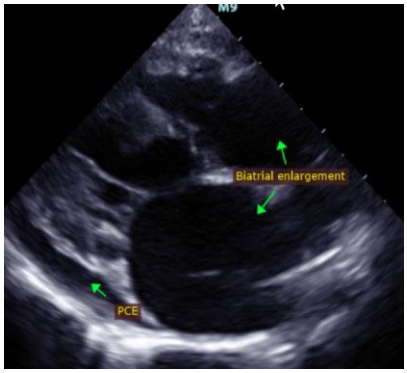
## RECOMMENDATIONS

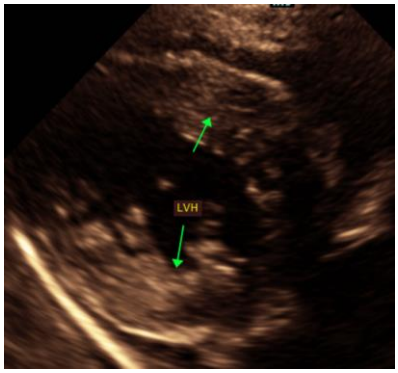
- Consider hospitalization for conversion (IV diltiazem), IV Lasix and overnight ECG monitoring. Once SVT is converted and the patient stabilized, discharge on Diltiazem 30mg tablets, give ¼ tab PO q12h, Lasix 1-2 mg/kg PO q12h, Pimobendan 1.25mg PO q12h. Plavix 75mg tabs; Give ¼ tab by mouth every 24 hours (NOTE: bitter along cut edge, may cause foaming at the mouth; coat in entirety).
- If hospitalization is declined, oral medications can be attempted as above. If patient is doing well after 3 days, recheck ECG/HR at that time. If patient further declines in the interim, hospitalization or euthanasia should be sought.
- Do not use an ACEI in this patient.
- Avoid anesthesia, fluid or steroid therapy.

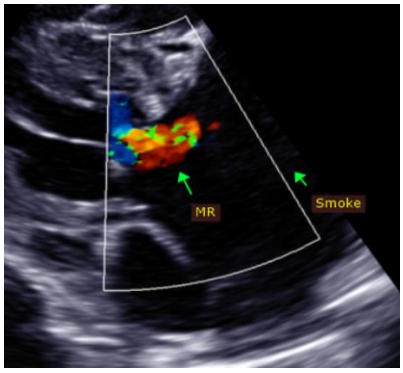
## PLAN

- Recheck renal panel, HR, BP in 1-2 weeks; then every 3-4 months.
- Once stabilized, monitoring of sleeping breathing rates at home is recommended as the best way to screen for progression to CHF at home.
- Recheck echocardiogram/ECG in 4-6 months to assess for progressive issues.

## IMAGES



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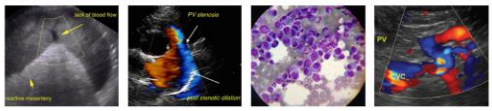

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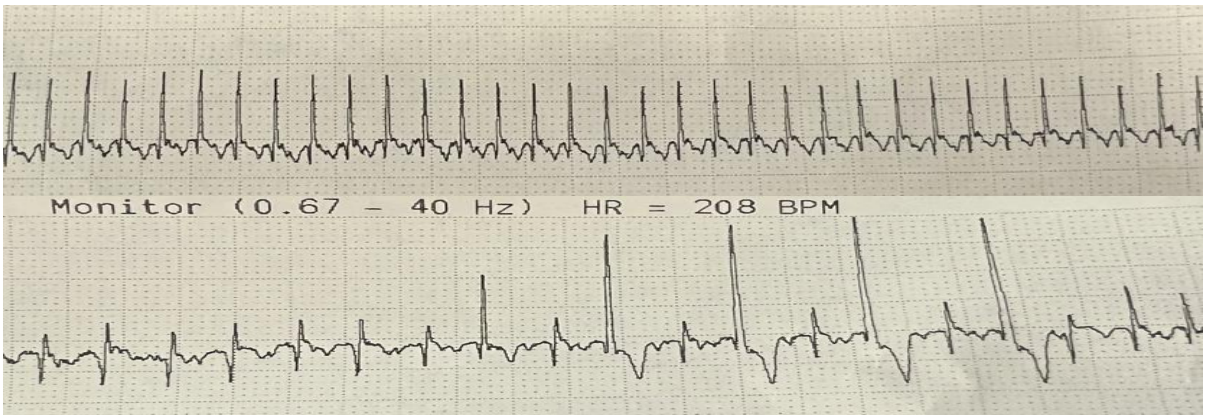


**The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.**

Thank you for this referral. This report was generated using transcription software, and minor dictation errors may be present. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance, please contact me.

**Maggie Machen Lamy, DVM**
**Diplomate of the American College of Veterinary Internal Medicine (Cardiology)**
info@sonopath.com