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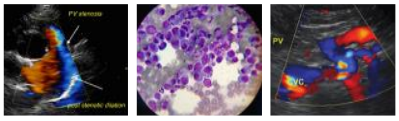

SonoPath
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**PATIENT**

Andrew Viera

**SPECIES**

Canine

**BREED**

Schnauzer Mix

**SEX**

Male Neutered

**AGE**

12 years

**WEIGHT**

19.9lbs

**INTERPRETED BY**

Maggie Machen Lamy, DVM, DACVIM (Cardiology)

**HOSPITAL NAME**

Everhart Veterinary Center

**REFERRING VET**

Not provided

**INVOICE**

20423

**DATE**

8/9/21

## PRESENTING CLINICAL SIGNS

History: Presented on 8/2 with congestive heart failure and episodes of syncope reported to last 30-60 minutes.
-Pertinent abnormal PE/Chem/CBC/UA Results: Mild elevation in PSL. Left atrial enlargement with prominent pulmonary edema.
-Current medications: Furosemide 50mg 1/2 tablet PO BID; Pimobendan 5mg 1 capsule PO SID.
-Sedation used: Not needed.
-STAT: Not requested/declined.

## ELECTROCARDIOGRAPHIC FINDINGS

A six lead ECG is available at both 25 and 50mm/s; 2mm/mV. The average heart rate is 100bpm with a largely regular rhythm. The rhythm is sinus in origin, with a p for every QRS complex and vice versa. The P wave morphology is positive with a normal dimension. Normal PR. The QRS morphology is positive with normal dimension. MEA is normal. Two single APCs are identified. No ventricular premature contractions, pauses or other dysrhythmias observed.
ECG diagnosis: Normal sinus rhythm with isolated APCs.

## ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Severe diffuse nodular thickening of mitral valve leaflets. Mild prolapse into the left atrial lumen. Severe eccentric mitral regurgitation with severe left atrial enlargement. MR velocity is elevated. Mild LV dilation with hyperdynamic myocardial function and evidence of volume overload. The tricuspid valve appears mildly thickened with mild tricuspid regurgitation. Velocity consistent with early pulmonary hypertension. The pulmonic and aortic valves appear normal in appearance and mobility. Normal pulmonic and aortic outflow velocities. No aortic or pulmonic insufficiency noted. No pericardial or pleural effusion seen.

## CARDIAC CHART

| 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 | <1.6 | 28-40 | 40-100 | <0.6 |
| PATIENT | 6.3 | 2.9 | NM | 2.8 | 42 | 74 | NM |
| **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 | BELOW | BELOW | BELOW | BELOW |
| PATIENT | 130 | 1.9 | 1.2 | 9.0 | 3.5 | 3.8 | 2.2 |
| *Normal chamber parameters expressed as a mean value | | | | 3 | 1.27 (5.3) | 2.46 (2.46) | 1.36 (5.5) |
| **BODY WEIGHT DEPENDENT PARAMETERS** | | | | 5 | 1.40 (4.5) | 2.74 (5.2) | 1.60 (4.7) |
| *Note: All measurements based upon multi-modal images and methods. An average value is reported. | | | | 10 | 1.50 (3.8) | 3.27 (3.5) | 2.06 (3.1) |
| | | | | 15 | 1.83 (2.0) | 3.71 (2.4) | 2.43 (2.1) |
| | | | | 20 | 2.02 (1.9) | 4.14 (2.2) | 2.80 (2.0) |
| | | | | 25 | 2.18 (2.4) | 4.48 (2.9) | 3.10 (2.5) |
| | | | | 30 | 2.33 (3.3) | 4.83 (3.9) | 3.39 (3.4) |
| | | | | 35 | 2.48 (4.3) | 5.17 (5.0) | 3.69 (4.5) |
| | | | | 40 | 2.62 (5.2) | 5.48 (6.1) | 3.96 (5.4) |
| | | | | 50 | 2.88 (7.1) | 6.07 (8.3) | 4.46 (7.4) |

Adapted from June Boon, Veterinary Echocardiography, 1998
Rishniw M and Hollis NE, J Vet Intern Med 2000; 14:429-435
Hansson et al, Vet Rad and Ultrasound 2002
Bonagura et al. Echocardiography: principles of interpretation, Vet Clin North Am 15:1177, 1995

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Chronic degenerative valve disease causing severe mitral and mild tricuspid regurgitation. Severe left atrial enlargement indicates there is an elevated risk for spontaneous congestive heart failure. Mild pulmonary hypertension is noted which is likely secondary to chronic LA pressure elevation. No additional issues are identified.

Syncope in this patient may be cardiogenic in origin; however, the length of the episodes is alarming and unusual. The most common cardiac cause for extended episodes would be sustained arrythmias; however, only two single APCs are noted on the ECG. This does not entirely rule out more malignant issues such as SVT or VT; however, even in these instances an hour is extremely long. A holter monitor can be considered if the episodes persists despite cardiac therapy as below. Other possibilities should also be considered including atypical seizures.

Recommend continue full cardiac support including twice daily Pimobendan therapy as below. The dose of Lasix is quite high, and if the patient is doing well consider a dose reduction. Long term prognosis is guarded to poor, however most dogs are able to maintain a good QOL on medications for an average of 8-12 months.

Monitoring of sleeping respiratory rates will be paramount to screen for congestive heart failure at home. Omega fatty acid supplementation and mild salt restriction may also be of some long-term benefit. Monitor for development of a cough, labored breathing, exercise intolerance or worsening collapse episodes in the future.

Elective anesthesia is not advised.

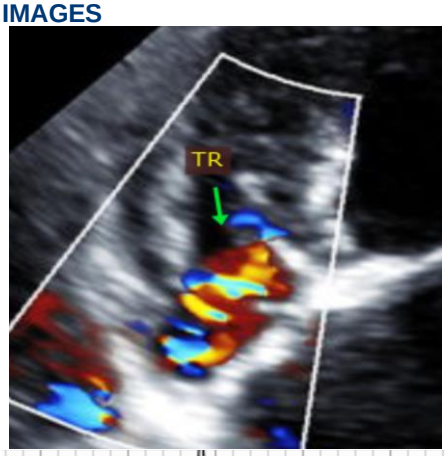
## PLAN

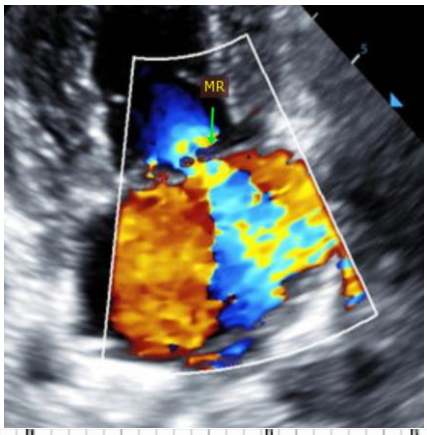
Administer Pimobendan 0.3mg/kg PO q12h. Administer Lasix 1-2mg/kg PO q12h. Administer Spironolactone 1-2mg/kg PO q12h. Monitor SRRs at home. If episodes persist consider a holter monitor, neurologic evaluation, etc.

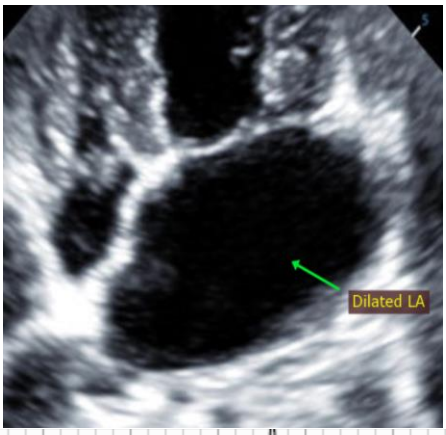
Monitor renal values/BP in 10-14 days, then every 3-4 months while on diuretics. If normotensive (>130mmHg), institute ACEI 0.5mg/kg PO q12h at that time.

Recommend conservative monitoring with a recheck echocardiogram in 4-6 months, sooner if any development of associated clinical signs occurs in the interim.

## IMAGES




**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)**