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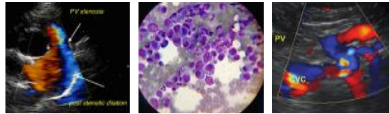

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PATIENT
Paul Dienelt

SPECIES
Feline

BREED
DSH

SEX
Male Neutered

AGE
7.26.13

WEIGHT
21.5lbs

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

HOSPITAL NAME
Paradise Animal Hospital

REFERRING VET
Dr. Twardzik

INVOICE
26134

DATE
8.31.22

PRESENTING CLINICAL SIGNS

History: Was seen by the emergency clinic on 8/5 for acute unilateral epistaxis. Had been doing great otherwise. Epistaxis stopped overnight but had developed a cough. On exam, patient was pale with a grade 2/6 systolic cardiac murmur and tachycardia. BCS 5/5. Patient growled on attempt at right hip extension. Moderate dental tartar.
-Pertinent abnormal PE/Chem/CBC/UA Results: Bloodwork/BPs (run at emergency clinic): BPs: Normotensive. CBC: HCT 27.2%, HGB 9.7. Chem: Elevated: Glu 196, BUN 37 mg/dL, ALT 241 U/L, Lipase 1931U/L, Decreased K+ 2.8 mmol/L, PT: WNL, PTT: Elevated at 148.
-Radiographs: No pulmonary metastasis is seen. A diffuse bronchial pattern is compatible with age-related change but could indicate pre-existing airway disease such as allergic bronchitis/asthma, fibrosis, or dirofilariasis. Mild cardiomegaly is suggestive of compensated cardiomyopathy. There is no venous congestion or pleural effusion to indicate heart failure. Mediastinal widening is due to a combination of tortuosity of the proximal aorta and a soft tissue structure (possible thymic cyst, thymoma, incidental branchial cyst, hematoma, or less likely lymphadenopathy). The added significance is unknown. Mild hepatomegaly is nonspecific and may be normal variation or secondary to vacuolar hepatopathy, hyperplasia, hepatitis, or infiltrative neoplasia. Urinary bladder distention could be due to increased urine production, voluntary retention, or
obstructive uropathy. No mineral opaque calculi are seen in the views provided .
-Current medications: 1 ml Convenia given SQ on 8/6, Yunnan Baiyao prescribed, but not started
-Sedation used: Not required to complete full diagnostic ultrasound.
-Pertinent previous ultrasound results: No previous.
-STAT: Not requested
-Imaging performed by: Andi Parkinson, BS, RDMS.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The left ventricular wall is borderline in dimension. There is a diffusely hyperechoic endocardium consistent with age-related fibrosis. Minimal remodeling. The papillary muscles are hyperechoic. The left atrium is normal in size. The right atrium is normal in size. The right ventricle appears normal. The mitral valve is normal in structure and mobility. No MR. The tricuspid valve appears normal in structure and mobility. No TR. The aortic root is markedly dilated. The ascending segment is poorly visualized. The aortic valve appears bicuspid and thickened without complete excursion in systole. Flow through the region is normal; however, this is suspected to be an underestimation. Mild aortic insufficiency. Blood flow through the RVOT is normal in velocity. No effusions. No obvious cardiac tumors.

CARDIAC CHART

FELINE CARDIAC PARAMETERS	BODY WEIGHT (kg)	HR (BPM)	IVSd (cm) (Moise, Pipers)	LVIDd (cm) (Moise, Pipers)	LVWd (cm) (Moise, Pipers)	FS (%)	EF (%)
NORMAL PARAMETER	------	150-240	3.5-0.55	<2 (mean 1.5)	3.5-0.55	35-67	80-100
PATIENT	9.8	177	0.57	1.6	0.56	56	90
FELINE CARDIAC PARAMETERS	**LA/AO** (Boon)	**LA/AO HEART BASE (Swe)** (Abbott)	**LA** 2D short axis Base view (cm) (Abbott)		**LVOT VEL** (m/s)	**RVOT VEL** (m/s)	**E max** (m/s)
NORMAL	<1.5	<1.3	<1.2		<1.6	<1.3	<0.9
PATIENT	NM	1.4	1.2		0.71	0.7	NM

Adapted from June Boon, Veterinary Echocardiography,1998
Abbott J & MacLean H JVIM 2006;20: 111-119, Moise et al. Am J Vet Res 47:1476, 1986. Pipers et al. Am J Vet Res 40:882, 1979.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The primary abnormality identified is an abnormal aortic valve/aortic root. The aortic valve is thickened and abnormally formed (bicuspid suspected). No obvious stenosis is confirmed; however, the valve does not appear to open adequately which is suspected to be the cause of the murmur. Mild aortic insufficiency is identified, and this should be monitored going forward as this can lead to volume overload over time. Borderline LV hypertrophy is noted, which may be a normal variant or may suggest early hypertrophy. Regardless, the LA is normal, indicating low risk for CHF at this time.

What is unusual in this case is the significance of aortic root enlargement. The ascending aorta is poorly visualized; however, is suspected to be dilated as well and explain the CXR abnormaity. In people, bicuspid aortic valve morphology often accompanies aortic abnormalities, which is thought to be the case here. That may put this patient at risk for aortic aneurysm or aortic dissection (both which may cause acute sudden death). This is rare to see in small animals, making it difficult to understand long term implications. Prognosis is guarded, as there will always be risk for complication going forward. Given the unusual findings in this case, referral for thoracic imaging is recommended (such as advanced thoracic imaging/CT scan). Finally, no obvious cystic lesion is identified; however, the cranial thoracic is not extensively visualized. My suspicion is the radiographic abnormalities are explained by the significantly enlarged aorta.

No medications are warranted at this time as the patients' blood pressure was reportedly normal. Periodic monitoring is advised as vasodilation would be indicated if any hypertension develops. No correlation with epistaxis is suspected in the absence of elevated blood pressure.

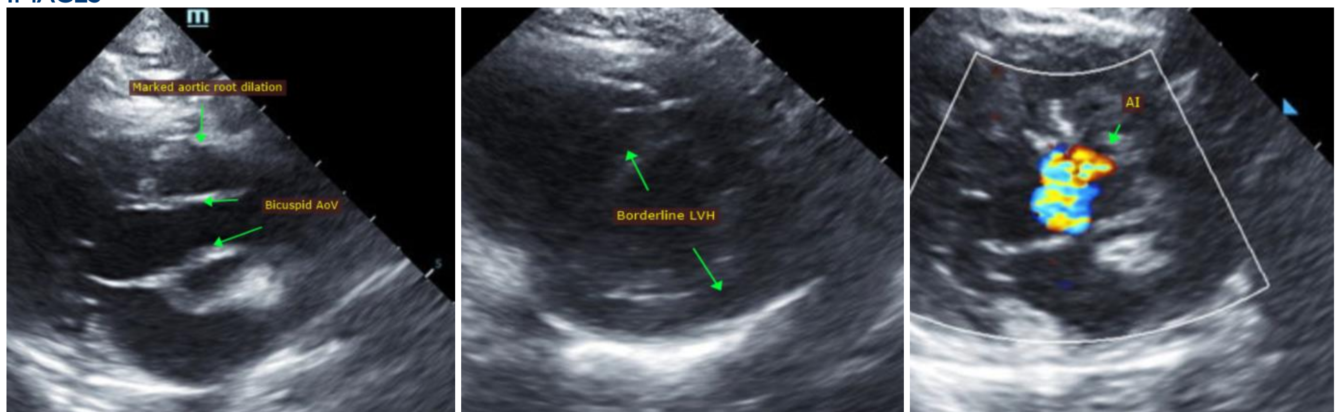
Monitor at home for signs of cardiac compromise, including respiratory changes and/or signs of a blood clot event (paralysis, neurologic changes).

PLAN

Consider referral as discussed. Monitor BP every 4-6 months lifelong.

Recommend recheck echocardiogram in 6 months, to screen for any progressive changes.

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)
info@sonopath.com