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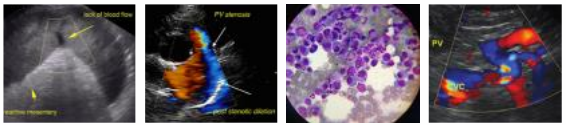


ANIMAL SOUNDS NW
MOBILE VETERINARY ULTRASOUND
IMAGING PERFORMED BY
AnimalSoundsNW.com 541-357-9423

PATIENT
Phoebe Oakes

SPECIES
Feline

BREED
Exotic

SEX
Female Intact

AGE
10 months

WEIGHT
6lbs

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

IMAGING PERFORMED BY
Sara Hansen

HOSPITAL NAME
Eugene Mobile Veterinary Services

REFERRING VET
Dr. Oberlander

INVOICE
25037

DATE
6/28/22

PRESENTING CLINICAL SIGNS

History: Heart murmur detected in January. Still present when examined two weeks ago. Need to schedule spay surgery.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The left ventricular wall thickness is normal to decreased. The LV diameter is mildly increased without evidence of dysfunction. There is mild remodeling of the endocardium. In the region of the LVOT an atypical ridge of tissue is seen (see below). This appears to be causing an LVOT obstruction, although this is not captured on Spectral doppler. The mitral valve is mildly thickened with trace MR. The LA is borderline in dimension. The RA appears largely normal. The RV is normal. Normal LVOT and RVOT. Mild aortic and no pulmonic insufficiency. No obvious cardiac shunts. No pleural or pericardial effusion seen. No obvious cardiac tumors.

CARDIAC CHART

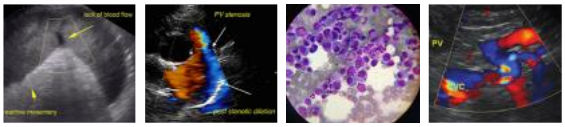
FELINE CARDIAC PARAMETERS	BODY WEIGHT (kg)	HR (BPM)	IVSd (cm) (Moise, Pipers)	LVIDd (cm) (Moise, Pipers)	LVWd (cm) (Moise, Pipers)	FS (%)	EF (%)
NORMAL PARAMETER	------	150-240	0.35-0.55	<2 (mean 1.5)	3.5-0.55	35-67	80-100
PATIENT	2.7	170	0.35	1.5	0.31	47	90
FELINE CARDIAC PARAMETERS	**LA/AO** (Boon)	**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	1.2	1.1		1.1	0.9	NM

**Note: All measurements based upon multi-modal images and methods. An average value is reported.*
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 diagnosis and cause of the murmur is suspected to be subaortic stenosis. This is highly unusual in cat; however, a ridge within the LVOT is visualized as below. The LV velocity is unable to be accurately measured and suspected to be mildly elevated. What is atypical is the LV appears mildly dilated with decreased wall dimensions. This may suggest an ancillary pathology not seen here; however, at least we can say that no hypertrophy is identified. Both atria appear largely normal, indicating low risk for complication at this time. A small aortic leak is noted, and lifelong blood pressure monitoring is advised. No additional issues are identified.

Given the usual nature of this case and multiple exams having already been performed, highly recommend referral to a local Cardiologist at least for serial exams in the future. Small abnormalities are easily missed, particularly in juvenile cats and intra- or extra-cardiac shunts are not entirely ruled out.



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Long term prognosis is guarded until the definitive diagnosis is established and patients rate of progression is assessed. Many cats will remain asymptomatic until mid-life or beyond, while others develop CHF within the first years. Close monitoring for development of LA dilation in the future will help determine long term prognosis.

While no medications have been shown to definitively alter long term outcome at this stage of disease, atenolol is often initiated to decrease the outflow obstruction. Given the young age of the cat and today's findings, I would not institute Atenolol at this time; however, follow up is advised as this will likely be indicated. No additional medications are indicated prior to significant LA dilation.

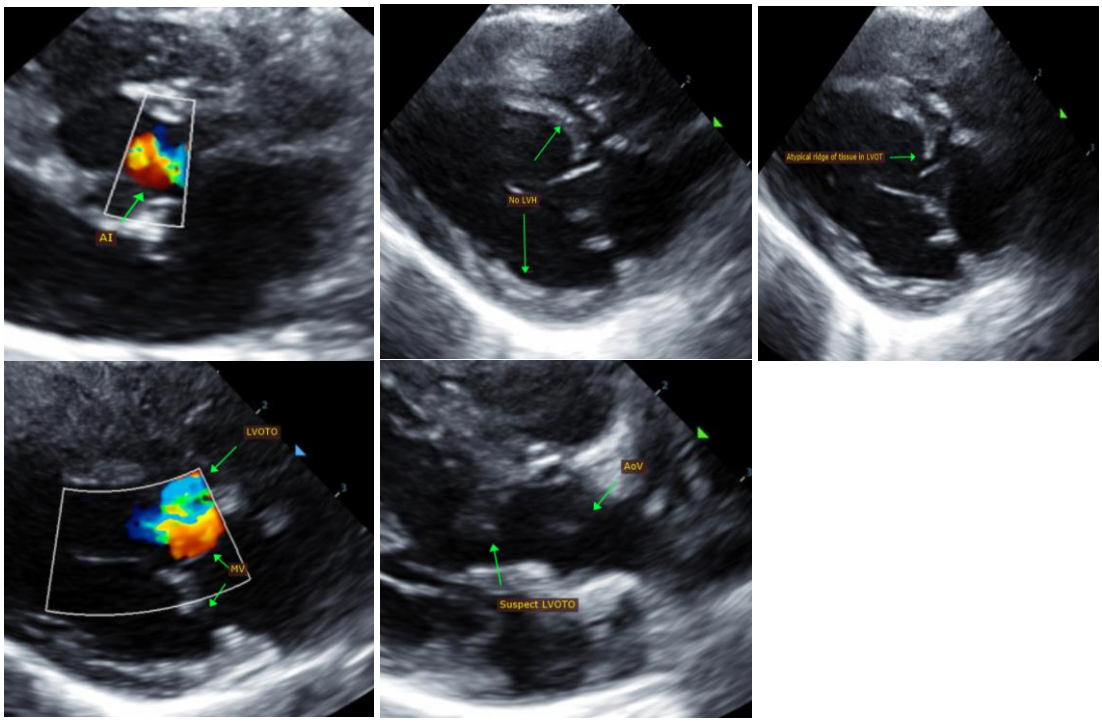
Anesthetic risk is considered mild, however judicious IV fluid rates are advised to avoid fluid overload. **Additionally, drugs that stimulate heart rate should be avoided unless clinically necessary (glycopyrrolate, atropine).** Avoid vasodilators as this may worsen the obstruction. A reasonable protocol includes opioid/benzodiazepine premedication, propofol induction, isoflurane maintenance. Additionally, steroids should be used with caution on older cats, as even a 'normal' heart can develop evidence of intolerance and fluid retention.

PLAN

Highly recommend referral in this unusual case.

If referral is declined, recommend conservative monitoring with a recheck echocardiogram in 6 months.

IMAGES



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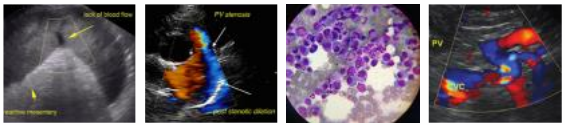

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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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