



PATIENT

Piruli Narvaez

SPECIES

Feline

BREED

Domestic Longhair

SEX

Spayed female

AGE

3 years

WEIGHT

9 lbs

INTERPRETED BY

Eric Lindquist, DMV
DABVP, Cert. IVUSS

IMAGING PERFORMED BY

Dr. Ferrer

HOSPITAL NAME

Pulse Pet Ultrasound
Service

REFERRING VET

Dr. Alicea

INVOICE

43928

DATE

4/22/23

PRESENTING CLINICAL SIGNS

History: Piruli is a 3 y/o f/s DSH that presented on 4/19/23 to the Emergency Clinic with hx of anorexia and ADR, dyspnea/tachypnea/open mouth breathing. Also had hx of possible neurologic/syncopal episode. increased BV sounds on the mid and dorsal thoracic area, but lower/muffled on the ventral chest. Suspected CHF, started Lasix 2mg/kg IV q 1 hr, then decreased based on RR over next day. 4/21, Piruli was lethargy, hypotensive (BP 80mmHg). Rads improved, and minimal to no pleural effusion noted, but BP was low 80mmHg. decreased to 1mg/kg PO TID, increased fluids mildly to 2ml/hr . water ad lib. protonix 1mg/kg iv sid, mirtazapine 0.25mg/kg topically EOD. Cat had episode of tremors, and suspected seizure, so added keppra 20mg/kg po tid. SPO2 100%. Electrolytes - K 3.0, mildly decreased Na/Cl. Changed fluid to plyte and added 20mEq/L KCl. Today 4/22/23 - BP 90mmHg, more alert. No v/d. recheck chem alt 405. RR 35 - 40. MM pink. Gallop rhythm noted. HR 180bpm. SPO 2 100 Echo done - results pending. decreased lasix to 1mg/kg po bid. Appetite not great. Gallop still present. no heart murmur noted. Concerns with CHF possible HCM. note - no palpable thyroid slip. Pending Echo report decide if need to add other meds or change treatments in any way. guarded to grave px.

Abnormal PE/Chem/CBC/UA Results: PE: No obvious heart murmur, gallop rhythm noted. BW: CBC - hemoconcentration chem - alt 992, bun 40, creat 1.4, t. bili 1.8. thoracic rads - suspect enlarged cardiac silhouette, mild pleural effusion, caudodoral pulm infiltrates, as well as cranilventrally.

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

The echocardiogram in this patient demonstrated upper limits of normal in LA max and normal in the heart base. The **mitral** valve was thickened in this patient. The **left ventricle** presented concentric hypertrophy without significant structural abnormalities. The **myocardium** presented normal echogenicity without subjective evidence of significant fibrotic or ischemic disease. **Contractility** of the ventricular walls was adequate and in normal range for this patient evidenced by the fractional shortening measurement and subjective evaluation of the different regions and angles of the myocardium. The **left ventricular outflow** tract demonstrated normal laminar flow and subjective structural integrity. The **right atrium** and auricle revealed normal size, structure and content. No evidence of masses was noted or chamber overload. **Tricuspid** valvular assessment demonstrated adequate linear morphology and kinetics. The **right ventricle** was of normal size (1/3 diameter of LV), chordae structure, myocardial echogenicity and thickness. **Pulmonic** tract assessment revealed normal valve structure, laminar flow, and diameter (approx. 1:1 pa/ao ratio). No visible **pericardial** or free pleura fluid was noted or extra cardiac pathology in the visible planes. The cranial **mediastinum and pericardial regions** were free of masses in the visible window.



PATIENT	FELINE	BODY WEIGHT	HR	IVSd	LVIDd	LVWd	FS	EF
Piruli Narvaez	CARDIAC PARAMETERS	(kg)	(BPM)	(cm)	(cm)	(cm)	(%)	(%)
SPECIES	NORMAL PARAMETER	-----	150-240	0.3-0.6	1.0-2.1	0.25-0.6	35-67	80-100
Feline	PATIENT		NM	0.66	1.15		30	
BREED	FELINE	LA/AO	LA/AO	LA		LVOT VEL.	RVOT VEL.	IVRT
Domestic Longhair	CARDIAC PARAMETERS	(Boon)	HEART BASE (Sisson)	2D 4-chamber long axis AS to FW (Sisson) (cm)		(m/s)	(m/s)	(m/)
SEX	NORMAL PARAMETER	<1.5	0.88-1.79	0.7-1.7		<1.6	<1.3	40-60
Spayed female	PATIENT		1.5	1.49		Under-estimated at 0.6 cm/sec	0.5	NM
AGE	Adapted from June Boon, Veterinary Echocardiography, 1998 Sisson D et al. JVIM 1991; 5: 232, Jacobs et al. Am J Vet Res 1985; 46:1705							
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ULTRASONOGRAPHIC FINDINGS

Minor hypertrophic cardiomyopathy with borderline left atrial size.

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Complicating factors should be considered in this patient as this is not a typical straightforward cardiomyopathy.

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Given the Lasix therapy this is likely a post treatment volume. Causes of myocarditis should be investigated such as Bartonella or similar. Gradual, diminished Lasix dose is warranted. Recheck sonogram is recommended in 3-5 days. Cause of myocarditis or nutritional cardiomyopathy should be considered. Plavix therapy is appropriate until further diagnostics are achieved. Recheck echocardiogram evaluating the left atrial size and contractility would be warranted on a frequent basis. Full echocardiogram is warranted in 2-4 weeks depending on the clinical progression. There is no evidence of systolic anterior motion. Mitral insufficiency could not be verified on color flow assessment, yet is suspected. An ace inhibitor could be justified; however, the cause of systemic disease should be evaluated prior to ace inhibitor therapy. Low dose Lasix or Plavix is recommended until further diagnostic are achieved. Left atrial size is only at the upper limits of normal to slightly enlarged.

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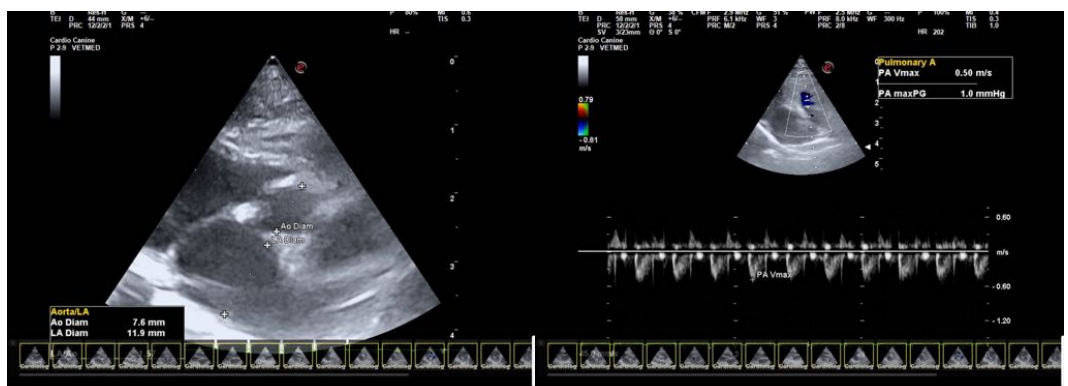
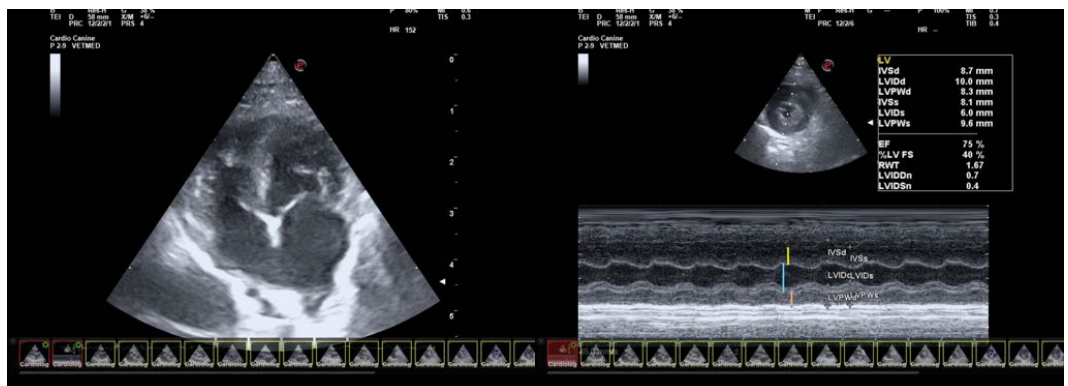
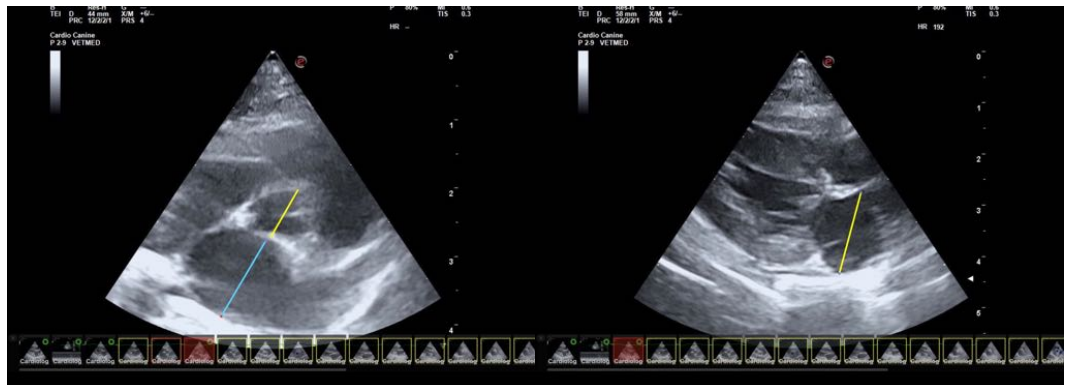
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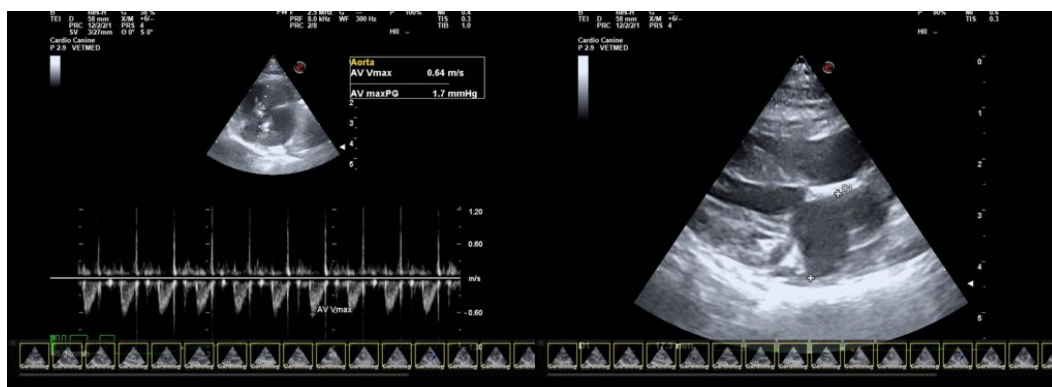
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Eric Lindquist, DMV, DABVP, Cert. IVUSS, CEO of SonoPath.com
info@SonoPath.com