



PATIENT

Luigi Coppola

SPECIES

Canine

BREED

Chihuahua

SEX

Neutered male

AGE

10/18/11

WEIGHT

20.96 lbs

INTERPRETED BY

Eric Lindquist, DMV
DABVP, Cert. IVUSS

IMAGING PERFORMED BY

Dr. Tudini

HOSPITAL NAME

Fetch TVMBVP

REFERRING VET

Dr. Tudini

INVOICE

DATE

8/2/23

PRESENTING CLINICAL SIGNS

History: Patient needs to be sedated every 3 months for nail trims due to significant aggression displayed during exams/nail trims. Traditionally Dexdom/Torb administered IV prior to exams. Recommended that an echocardiogram be pursued for further assessment of heart structure given now elevated ProBNP level, increasing cardiac murmur and need for medicated exams. Patient was started on vetmedin 5mg tablet (1/2 PO BID) and enalapril 5mg (1 tab PO SID) in 05/23 with known clinical and diagnostic findings as owner initially declined echocardiogram due to cost. Patient received 100mg Trazodone and 300mg Gabapentin 2 hrs prior to appt and 0.4mg/kg Butorphanol IV immediately prior to echocardiogram

Abnormal PE/Chem/CBC/UA Results: BCS 9/9 Cardiac: Grade 3/6 left sided systolic murmur becomes more audible following sedation, no arrhythmia, femoral pulse quality good and no missed beats - CBC: WNL - Biochem: ALP 196 (5 - 160 U/L) Cardiopet proBNP (Canine) b 1,142 (0 - 900 pmol/L) - T4: WNL

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

The **echocardiogram** presented a prominent **right heart** with mild **right ventricular** hypertrophy, with moderate, centralized **tricuspid** insufficiency. The **right atrial** size was normal. No evidence of neoplasia was noted in the right auricle, or elsewhere in the heart. The **pulmonary artery** was uniformly prominent with mildly depressed pulmonic velocity measured on PW Doppler. No overt heartworms were noted in the main or visible deep pulmonary arteries. Yet, theoretically heartworms could be present in the deep pulmonary vasculature out of visible sonographic range. More likely, however, this prominent right heart is due to excessive intra-thoracic pressures caused by chronic respiratory disease or potentially excessive intra-thoracic fat (Pickwickian syndrome). The **left heart** demonstrated a linear **ventricular septum**. Contractility was functionally adequate demonstrated by the FS% measurement. The **mitral valve** revealed mild, eccentric insufficiency. There was no significant **left atrial** dilation noted. The **left ventricular outflow** demonstrated normal flow patterns and velocities through the aortic valve. No evidence of tumor, pericardial or pleural effusion was noted. The visible **extra-cardiac** tissues were uniformly linear without evidence of masses, infiltrative or inflammatory mediastinal tissue. No evident arrhythmic activity was noted during the exam. The hepatic veins are not excessively dilated.

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base;)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	Up to 1.6	28-40	40-100	<0.6
PATIENT			NM		35	80	0.1
CANINE CARDIAC PARAMETERS	HR (BPM)	AV VMAX (m/s)	PV MAX (m/s)	BODY WEIGHT	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				20.96 lbs	2.6	2.18	



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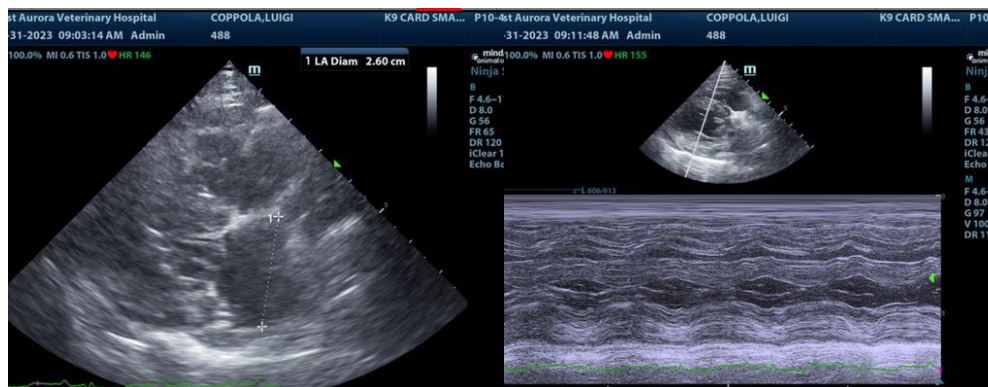
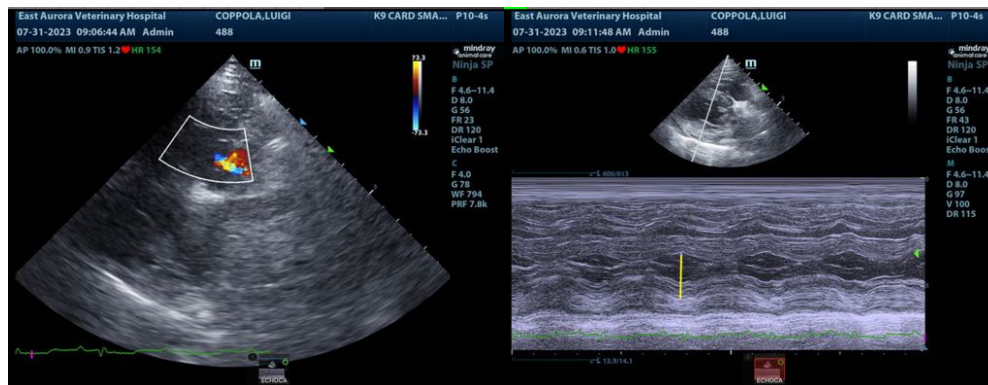
ULTRASONOGRAPHIC FINDINGS

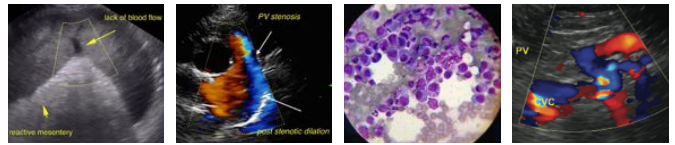
Mitral and tricuspid insufficiency with cor pulmonale presentation.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

There was no significant volume overload noted even though hypertrophy was noted in all three ventricular walls. Blood pressure measurements are recommended to assess for systemic hypertension. No specific therapy is warranted. There was no volume overload evident. Assessment for systemic disease as cause of proBNP elevation is also warranted. The heart may be an effector organ in this case. Although TR velocities were not available the pulmonary hypertension is likely an issue given the cardiac confirmation, yet this is not likely a clinical issue since the hepatic veins were not dilated at this point. However, this should be monitored over the next 6 months especially if exercise intolerance is an issue or chronic respiratory disease.

The heart is stable without clinical disease. No overt contraindication for anesthesia of brief to moderate duration. I suggest Torbutrol premed, Propofol induction, Isoflor maintenance or similar protocol if anesthesia is desired. Blood pressure recommended if not already performed and target white coat negative systolic pressure of < 160 mmHg. If higher than this ACE-inhibitor is suggested to reach this level. Recheck echocardiogram is recommended in 6 months, earlier if murmur grade increases or clinical signs initiate.





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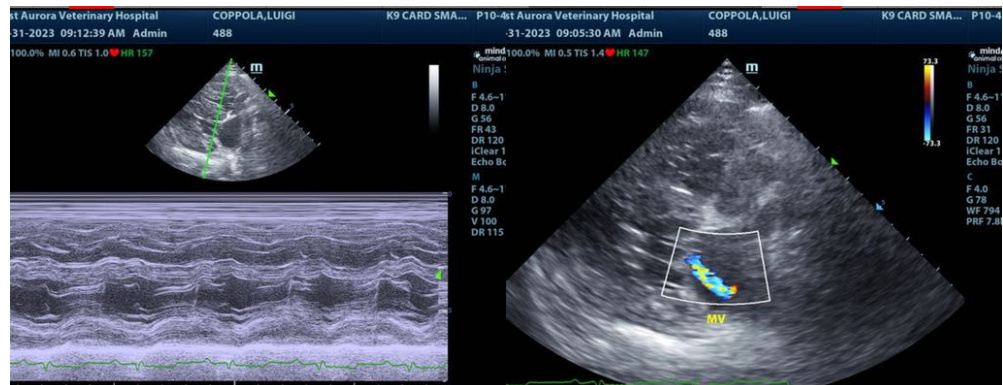
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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