



PATIENT PRESENTING CLINICAL SIGNS

PATIENT
Boris Henry

Presented on ER yesterday 9/24 for for a several day history of lethargy, inappetence, and possible shortness of breath. He appears to have recently lost weight along his topline, as it is appearing bony and historically he has been a 9kg cat. Boris is an indoor/outdoor cat. He's had very minimal prior vet visits and is very fractious at the vet. Thoracic radiographs were largely unremarkable. Labs found mild non-regenerative anemia (24%), neutrophilia (14.4k), mild hypoglycemia (69), azotemia (SDMA: 23, BUN: 85, Cr: unreadable). UA showed USG 1.030 , suspect bacteria, A C/S is pending on the urine. Overnight he rested quietly when not disturbed, had no interest in food/water, and had a urination (seemed small in volume). He had no episodes of v/d/c/s. He was on 30 mL/hr crystalloids through the night and appeared volume overloaded this morning. Fluids were d/c'd for several hours prior to ultrasound, and appearance of B-lines improved as well as temp coming up. Abnormal PE/Chem/CBC/UA Results: Recheck on his Renal values today is confusing: the BUN is higher at 117 and the Cr is normal. We used 2 different machines to recheck the values today. The I-stat showed BUN 140 and Cr 2.2; the IDEXX Catalyst showed BUN 117, Cr < 1.0. Glucose continues to be mildly decreased at 64 mg/dL. A sample of the free abdominal fluid was somewhat viscous, white and cloudy (not like chyle though); stained prep showed abundant inflammatory cells- some bands, some mature appearing neutrophils, and a lot of cells uncertain i.d but many with double nuclei. No obvious bacteria.

SPECIES

Feline

BREED

DSH

SEX

Neutered Male

AGE

19 Years

WEIGHT

7 kg

INTERPRETED BY

Eric Lindquist, DMV
DABVP, Cert. IVUSS

IMAGING PERFORMED BY

Dr. Callihan

HOSPITAL NAME

Animal Emergency
Care

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ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

FELINE CARDIAC PARAMETERS	BODY WEIGHT (kg)	HR (BPM)	IVSd (cm)	LVIDd (cm)	LVWd (cm)	FS (%)	EF (%)
NORMAL PARAMETER	-----	150-240	0.3-0.6	1.0-2.1	0.25-0.6	35-67	80-100
PATIENT		NM	0.79	1.58	0.77	51	85
FELINE CARDIAC PARAMETERS	LA/AO (Boon)	LA/AO HEART BASE (Sisson)	LA 2D 4-chamber long axis AS to FW (Sisson) (cm)	LVOT VEL. (m/s)	RVOT VEL. (m/s)	IVRT (m/)	
NORMAL PARAMETER	<1.5	0.88-1.79	0.7-1.7	<1.6	<1.3	40-60	
PATIENT	2.63	1.8	2.05	1.44	0.99	NM	
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							

Cardiac Presentation

The echocardiogram in this patient demonstrated volume overload in the left atrium with mild concentric hypertrophy of the left ventricle. Mild mitral insufficiency noted. Mild pulmonic insufficiency also present. Tricuspid insufficiency also present. Contractility appeared adequate. Trace pericardial effusion noted, likely owing to early left-sided failure.

Urinary System

The urinary bladder presented a minimal amount of urine at the time of the sonogram.

The kidneys presented chronic, subjectively end stage interstitial nephrosis pattern. The right kidney measured 5.03 cm. The left kidney measured 4.97 cm.



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Adrenal Glands

Both **adrenal glands** were visualized and recognized as having normal shape, size, position and echogenicity for this breed. The phrenic vasculature, glandular echogenicity and detail were unremarkable. Capsule, cortex, and medullary definition were normal for this age patient. The right adrenal gland measured 0.9 cm x 0.4 cm.

Spleen

The **spleen** presented scalloping contour with heterogeneous parenchymal nodules and measured at the upper limits of normal at 0.9 cm.

Liver

The **liver** revealed uniform parenchyma. The gallbladder and common bile duct were unremarkable. Slight hepatic vein dilation noted, consistent with passive congestion.

Gastrointestinal

The **stomach** itself was unremarkable. Minor variable intestinal thickening noted with regional mesenteric lymphadenopathy. The descending colon was significantly repleted with hard stool.

Pancreas

Ill-defined, nodular mixed hypoechoic changes were noted throughout the **pancreas**.

Free Abdomen

A moderate amount of free fluid was noted with heterogeneous omental changes.

Comet tail lung pattern noted in variable portions of the lung field.

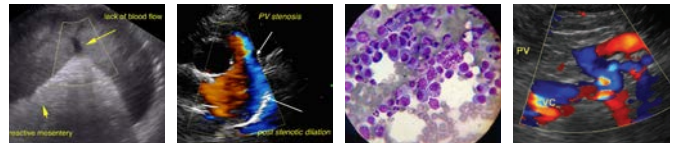
ULTRASONOGRAPHIC FINDINGS

- Nodular pancreas with echogenic free fluid
- Nodular spleen
- Subjectively near end stage interstitial nephrosis pattern
- Comet tail lung pattern

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

I feel there are at least 3 separate issues occurring in this patient. Chronic interstitial nephrosis is present (not the primary issue, however will be employed in the long-term viability of this patient). The abdominal effusion is echogenic and nodular pancreatic and omental changes are concerning for carcinomatosis. There is a mild passive congestion liver pattern, likely owing to the concurrent heart disease with emerging left-sided heart failure and likely early right-sided failure given the hepatic vein dilation. However, if the ascites were owing to right-sided failure, it would not explain the echogenic debris in the fluid.

I recommend stabilization with low-dose Lasix in this patient to treat the heart issue, 3-view chest radiographs, and abdominocentesis of the free fluid with cytopsin to assess for carcinomatosis. If carcinomatosis or similar neoplasia is confirmed, then prognosis is poor. Given the comet tail lung pattern, metastatic disease to the chest is a strong potential. Both prerenal and renal azotemia are playing a role in this patient.



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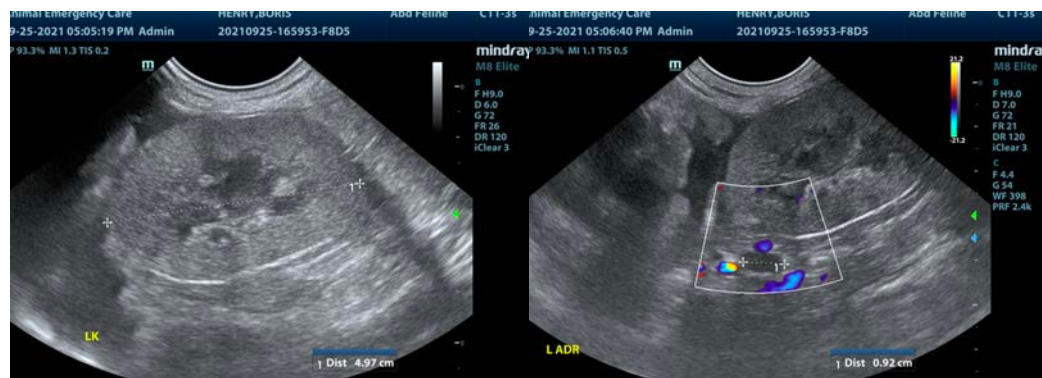
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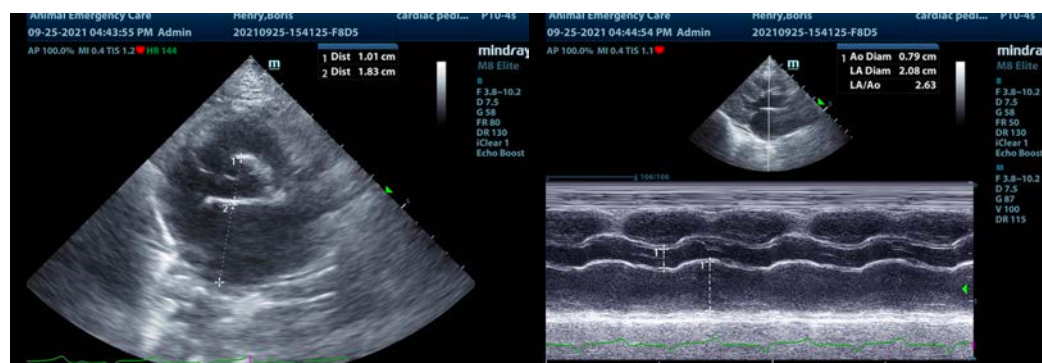
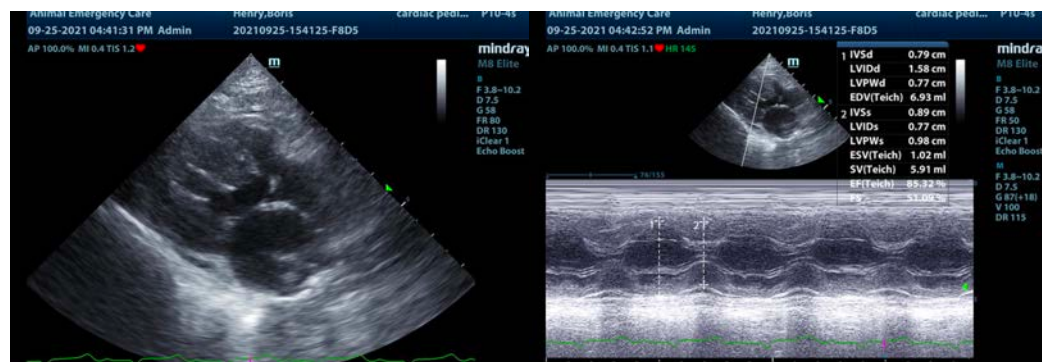
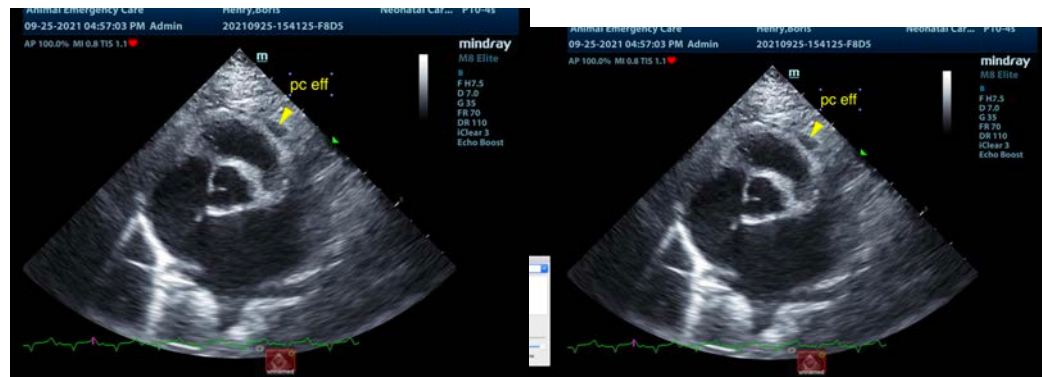
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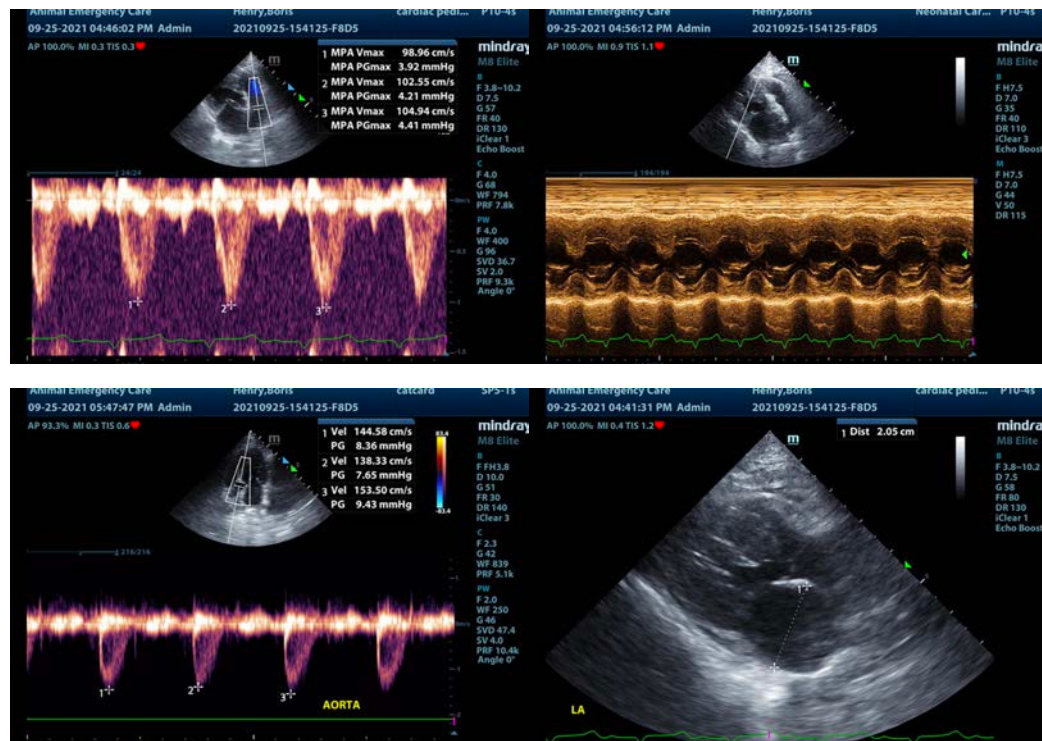
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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