


PATIENT

Roxy Kuper

SPECIES

Feline

BREED

DSH

SEX

FS

AGE

14 years

WEIGHT

7.4 lbs.

INTERPRETED BY

 R. McKenzie Daniel,
 DVM, DABVP
 (Canine and Feline)

IMAGING PERFORMED BY

Kelly Vazquez

HOSPITAL NAME

Dr. Taylor McConnell

REFERRING VET

Dr. Taylor McConnell

INVOICE

12948

DATE

1/4/22

PRESENTING CLINICAL SIGNS

 Pleural effusion, tachypnea, renal disease. Current meds: Lasix, ondansetron, Baytril, unasyn.
 Abnormal PE/Chem/CBC/UA Results: HCT 29.5, HGB 9.3, neut. 12.75, PLT 75, creat. 3.4, BUN 45.

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		124	0.44	1.8	0.44	33.3	65.6
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	1.95	2.2	2.0	1.9	0.8	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 revealed normal left ventricle wall thicknesses with subjective mild hyperechoic endocardium, potentially indicative of fibrosis. LV systolic function is decreased. The LV and RV exhibited increased volume. The left atrium was moderate to markedly dilated with anechoic content and without evidence of spontaneous contrast. The right atrium exhibited concurrent dilation with anechoic content and without evidence of spontaneous contrast. The mitral valve was sonographically unremarkable and without overt evidence of mitral insufficiency. Mild tricuspid valve insufficiency was present on color doppler assessment. Tricuspid regurgitation velocity measured 1.4 m/s. Subjective laminar blood flow was noted through both the LVOT and RVOT with normal velocities. Scant pericardial effusion is seen. Moderate volume pleural effusion was present. No overt evidence of cardiac or pericardiac tumors was noted.

Urinary System

The urinary bladder was distended in size yet with subjective normal tone. No evidence of inflammatory or neoplastic mural criteria was noted. Anechoic content was present. The urethra exhibited normal structure and tone to a dept of 2.0 cm.

The area of the aortic trifurcation was free of pathology.

Normal renal size with asymmetrical margination were present in both kidneys. The renal cortex presented uniformly increased in echogenicity with uniform echotexture. The renal cortex appeared to



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be hypertrophied resulting in an altered cortex: medulla ratio. Mild loss of corticomedullary distinction was also present. Areas of renal asymmetry and associated subtle increased cortical hypertrophy consistent with cortical infarctions were present. Significant decreased medullary volume with pinpoint areas of dystrophic mineral were noted. The renal medullary volume was subjectively reduced. The left kidney measured 3.5 cm in length. The right kidney measured 3.5 cm in length.

Adrenal Glands

No overt pathology was noted in the area of the left or right adrenal glands.

Spleen

The spleen exhibited a finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. The capsule was smooth and regular without apparent expansion. The splenic vasculature at the hilus was normal in volume with no evidence of congestion or thrombosis. Acute to chronic inflammatory, neoplastic, or benign parenchyma changes were not noted.

Liver/ Gallbladder

The liver exhibited potential for mild generalized enlargement with symmetrical yet swollen contour. The parenchyma exhibited conserved uniform parenchyma with normal echogenicity isoechoic to the spleen and falciform fat. The caudal vena cava at the level of the liver and diaphragm was mildly dilated without overt evidence of thrombus formation. A solitary, mild hyperechoic to cystic nodule was noted in the deep mid liver adjacent to the caudal vena cava, likely consistent with focal benign cystic biliary adenoma. The gallbladder was non-distended in size with thin walls and primarily anechoic luminal content. The cystic and common bile ducts were normal.

Gastrointestinal

The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach was empty with no signs of ileus, obstruction, or foreign material.

The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. The lumen of the small intestine was empty with no signs of ileus, obstruction, or foreign material.

Normal visible colon wall layers were present with apparent formed feces in lumen.

Pancreas

The pancreas was mildly prominent in size with heterogeneous parenchyma exhibiting subtle hypoechoic striations. The parenchyma of the pancreas was hyperechoic to adjacent omental fat with diffuse parenchyma remodeling. The capsule of the pancreas was mildly asymmetrical in contour without evidence of peripancreatic inflammation. These changes may suggest chronic inflammation, fibrosis, or saponification if previous history of pancreatitis. No overt signs of pancreatic neoplasia.

Free Abdomen

Moderate volume peritoneal free fluid exhibiting potential for minor cellular component. No overt lymphadenopathy was present.



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ULTRASONOGRAPHIC FINDINGS

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Primary Findings

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- Unclassified cardiomyopathy exhibiting biatrial enlargement and LV systolic dysfunction
- Mild TR
- Marked chronic degenerative renal changes with cortical infarctions
- Mild congestive hepatopathy with focal probable benign parenchymal nodule
- Pleural, peritoneal and mild pericardial effusion

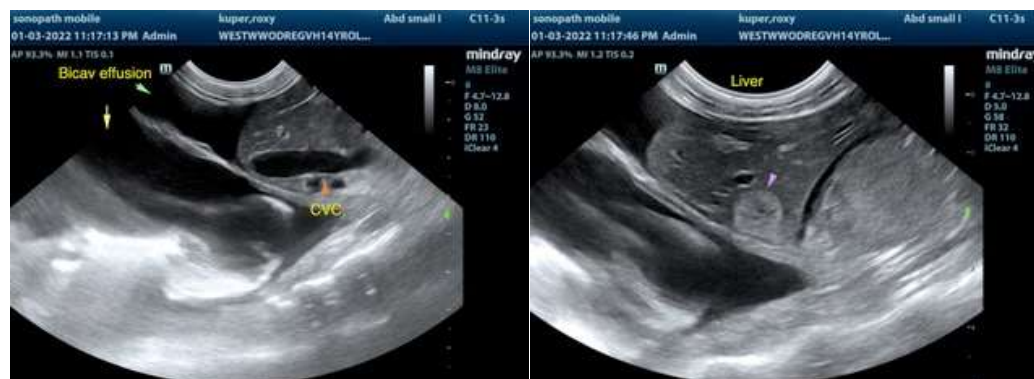
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Potential for burnout or end-stage hypertrophic cardiomyopathy may also present in a similar sonographic manner. Systolic dysfunction indicated by reduced fractional shortening, as well as potential for concurrent diastolic dysfunction owing to LV remodeling and potential fibrosis is possible.

Regardless of classification, the degree of biatrial enlargement and systolic dysfunction is consistent with congestive heart failure as the probable cause of the tri-cavitary effusion in this patient. Long term prognosis is likely poor. However, medical therapy is recommended. Potential for a noncardiogenic cause of the effusion is considered less likely. However, correlation with effusion analysis, cytology, +/- C/S would be appropriate. Consider hospitalization with medical therapy and oxygen supplementation until patient is stabilized. Lasix 1.0-2.0 mg/kg PO BID, Clopidogrel 75 mg tab (1/4 tab) SID, as this patient is at high risk for thrombus formation and off label Pimobendan 1.25 mg PO BID are recommended.

Give the presentation of the bilateral kidneys, as well as degree of azotemia, this patient is at high risk for adverse renal effects owing to diuretic therapy. Closing monitoring of renal values and blood pressure is advised.

If possible, prophylactic thoracocentesis may be considered to alleviate dyspnea.





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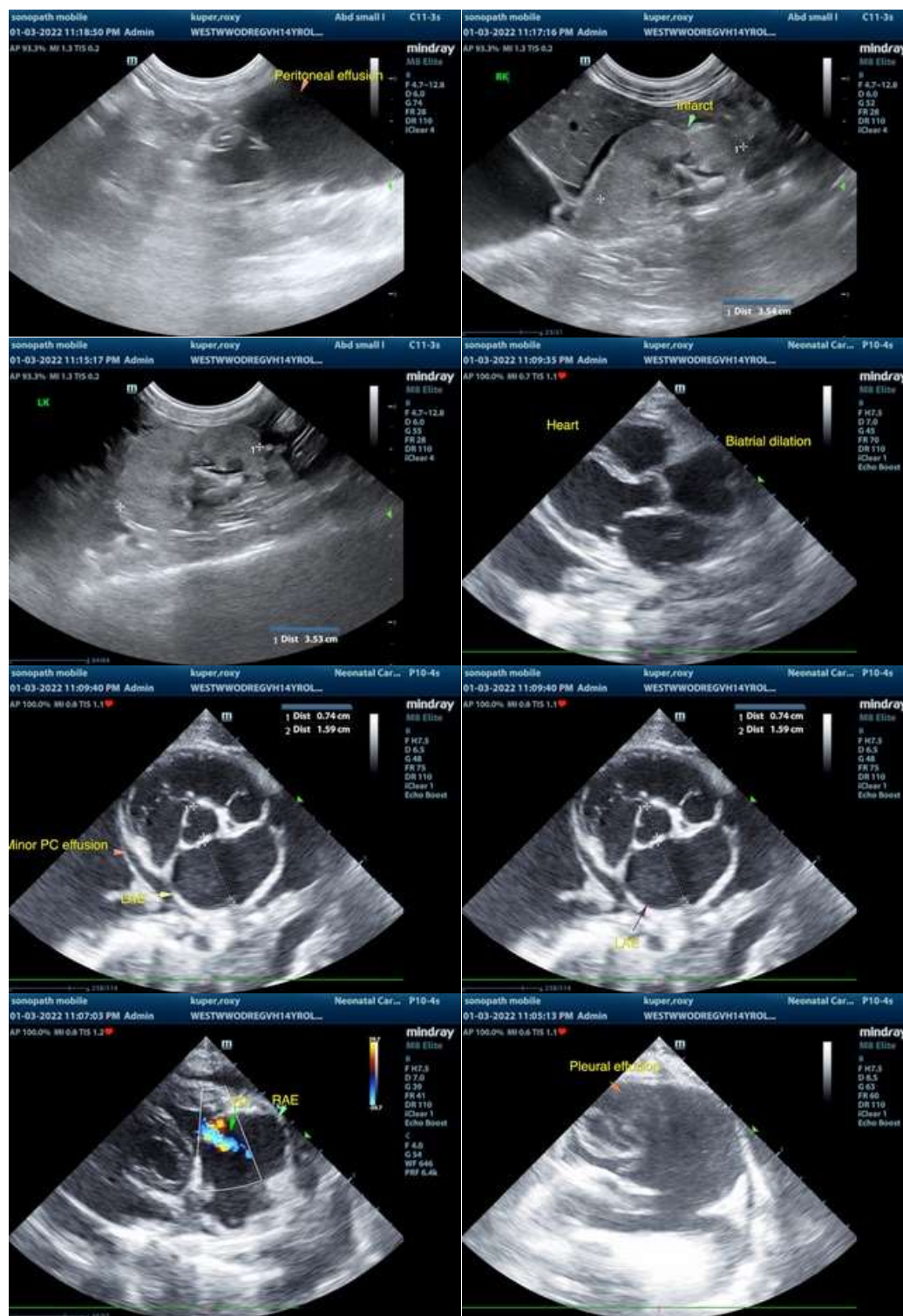
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.



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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.

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info@SonoPath.com

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