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Clinical Sonography & Telecytology
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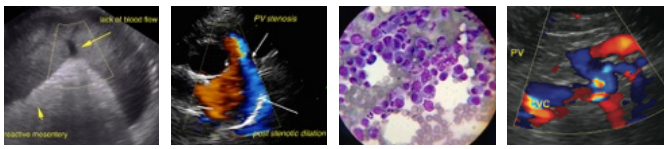


PATIENT
Lucy Sohn

SPECIES
Canine

BREED
Pom

SEX
Spayed Female

AGE
12

WEIGHT
7.8

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

IMAGING PERFORMED BY
Jenn

HOSPITAL NAME
Rockaway Animal Hospital

REFERRING VET
Dr. Maniar

INVOICE
10360

DATE
7/20/2023

PRESENTING CLINICAL SIGNS

Urinating small amounts for the past 3-5 days

ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.3	28-40	40-100	<0.6
PATIENT	--	--	NM	1.45	45	80	0.2
CANINE CARDIAC PARAMETERS	**HR** (BPM)	**AV VMAX** (m/s)	**PV MAX** (m/s)	**BODY WEIGHT** (kg)	**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				
PATIENT	NM	1.3	1.1	--	2.5	2.5	--

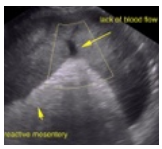
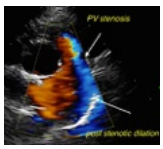
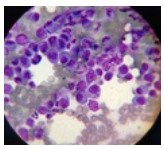
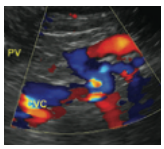
Cardiac Presentation

The echocardiogram in this patient demonstrated normal left atrial size based on 3 separate methods of LA evaluation. The cranial and caudal mitral valve leaflets presented normal linear structure, extension in systole, and union in diastole with normal kinesis. The left ventricle presented thicknesses with linear contour and was not dilated nor restricted. 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 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. Tricuspid valvular assessment demonstrated adequate linear morphology and kinesis. The right ventricle was of normal size (1/3 diameter of LV), chordae structure, myocardial echogenicity, and thickness. Pulmonary outflow 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. The cranial mediastinum and pericardial and extra-cardiac regions were free of masses in the visible window. Intermittent to consistent arrhythmia potential for ventricular premature contraction.

Urinary System

The urinary bladder normal in size, overtly normal urinary bladder wall and visible pelvic urethra to a depth of 3 cm exhibited normal structure and tone. Anechoic urine was present in the lumen with no uroliths or sediment. Large irregular cystic calculus with potential for accumulated multiple cystic calculi in the urinary bladder lumen measuring 2.2 cm in diameter. No evidence of urinary bladder tumor. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes was noted.

The area of the aortic trifurcation was free of pathology.

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Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio was maintained. The medulla and cortices were uniform in texture with some increased echogenicity and mild loss of corticomedullary symmetry and definition expected for the age of the patient. Focal areas of mild medullary mineral. No pyelectasia is noted. No evidence of pelvic dilation was present. The left kidney measured 3.7 cm in length. The right kidney measured 3.9 cm in length.

Adrenal Glands

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 1.3 cm in length x 0.50 cm at the caudal pole width. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 1.5 cm in length x 0.57 cm at the caudal pole width.

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 was subjectively normal in size, structure, and contour. The liver parenchyma was uniform and hypoechoic to the spleen with a mild coarse echotexture. The hepatic and portal vasculature were normal in appearance without signs of congestion. Normal hepatic vascular volume. 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 parenchyma of the left limb, body, and right limb of the pancreas presented isoechoic to the adjacent omental fat. A normal curvilinear capsule contour of the pancreas was present. The visible pancreatic duct was normal. No signs of active inflammation or neoplastic disease were evident.

Free Abdomen

No overt lymphadenopathy or peritoneal effusion was present.

ULTRASONOGRAPHIC FINDINGS

Primary Findings

- Normal cardiac structure/function

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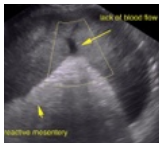
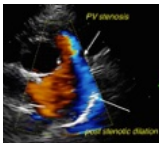
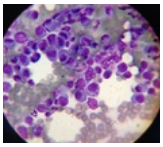
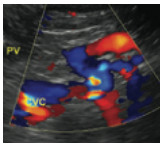

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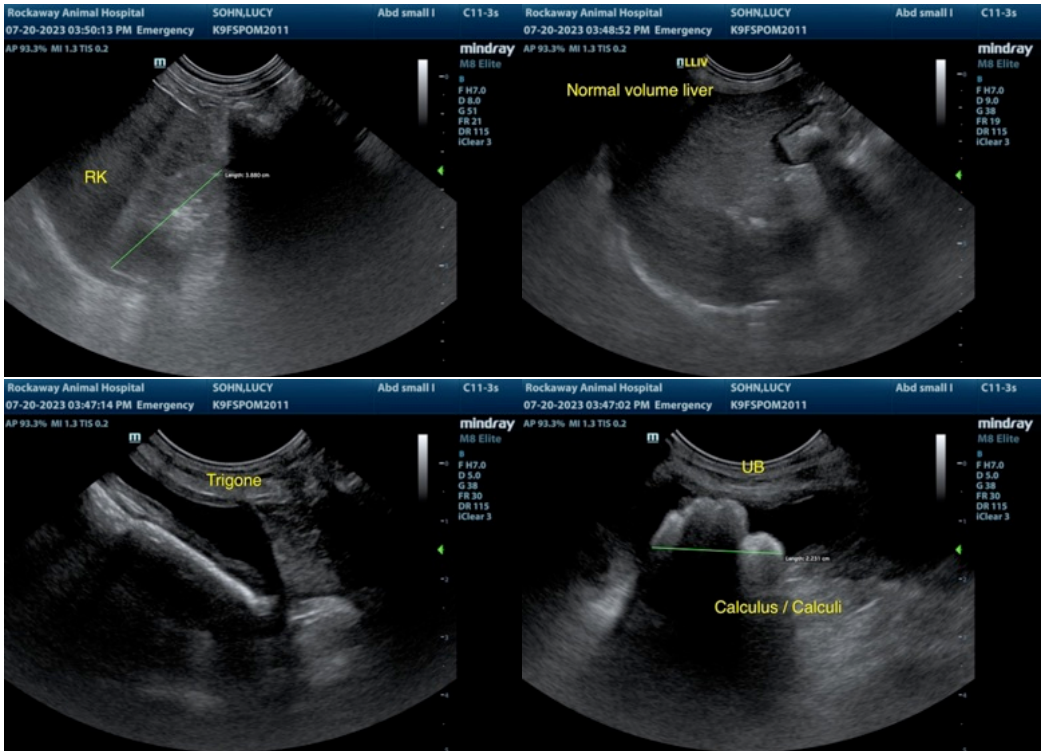
- Intermittent to consistent arrhythmia
- Moderately sized irregular cystic calculus potential for accumulated smaller cystic calculi.
- Mild chronic renal changes with minor medullary mineral.
- Normal volume liver.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

No evidence of cardiac clinical issues such as left or right heart chamber enlargement, LV systolic dysfunction, or clinical pulmonary hypertension. The potential for mild compensated MR could be possible if a murmur is present. Regardless, the hemodynamic effects of any valvular insufficiency present appear to be minimal without evidence of left or right heart chamber enlargement. ECG assessment is recommended for further clarification of the arrhythmia. Pending ECG assessment, no overt anesthetic contraindications.

Potentially the cystic calculus to calculi may be mobile and moving into the area of the urinary outflow periodically. However, no evidence of obstruction to the urinary outflow currently present. Cystotomy with concurrent urine C/S is recommended. No evidence of intraabdominal or urinary tract neoplastic criteria.

A suggested anesthetic protocol may include opioid or Benzodiazepine pre-med, induction with Propofol or Alfaxalone, and appropriate gas anesthesia with avoidance of alpha 2 agonists.



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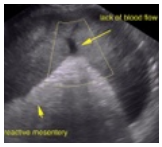
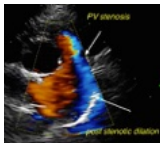
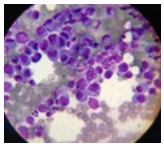
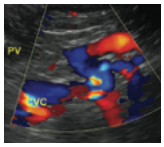

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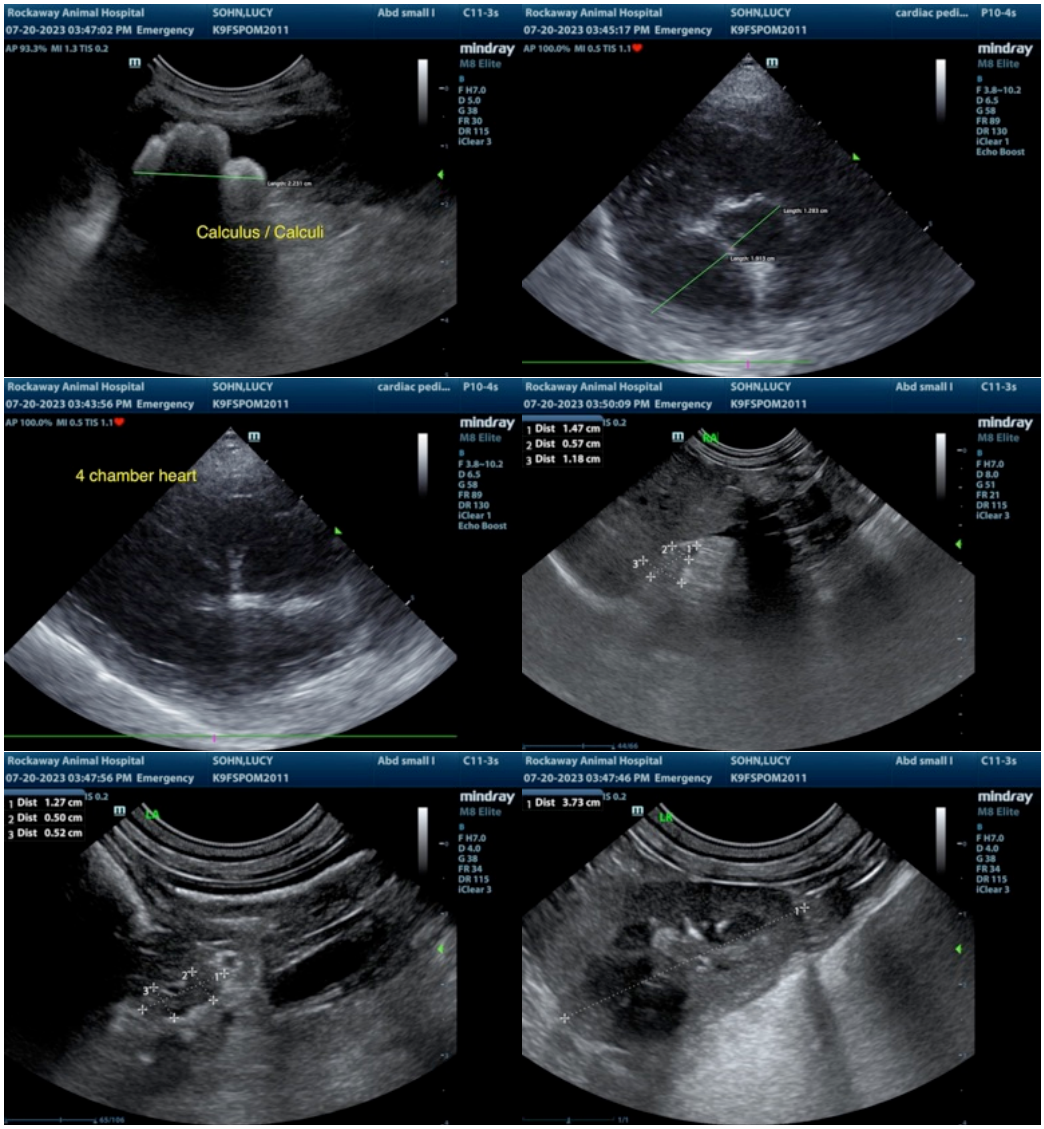

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

R. McKenzie Daniel, DVM, DABVP (Canine / Feline Practice)
info@SonoPath.com