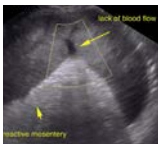
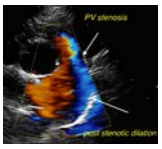
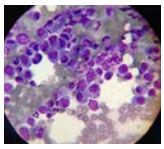
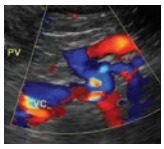
SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™

SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT
Bubba Wood

SPECIES
Feline

BREED
DSH

SEX
Neutered Male

AGE
15 Years

WEIGHT
18

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

IMAGING PERFORMED BY
Jenn

HOSPITAL NAME
Rockaway AH

REFERRING VET
Dr. Maniar

INVOICE
24688

DATE
8/14/21

PRESENTING CLINICAL SIGNS

presented for acute resp distress pleural effusion present on radiographs no HM auscultated Current meds 1 dose of Lasix.

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	0.62	1.1	0.59	54	88.8
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	--	1.3	1.40		1.0	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

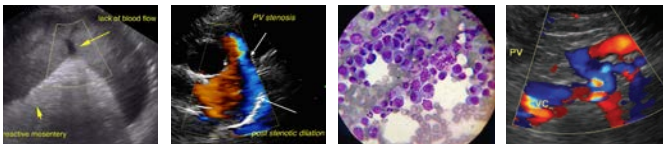
Cardiac Presentation

The echocardiogram in this patient demonstrated normal **left atrial** size and structure. Chamber volume and blood echogenicity were normal without evidence of spontaneous contrast or thrombi. The cranial and caudal **mitral** valve leaflets presented minor irregular age-related changes that are not clinically significant at this time with adequate extension in systole and union in diastole. The **left ventricle** presented borderline excessive free wall and septal thicknesses with primarily maintained linera contour. The **myocardium** presented some echogenic remodeling consistent with expected age-related change. **Contractility** of the ventricular walls was adequate and in normal range for this breed and patient size. The **left ventricular outflow** tract demonstrated normal laminar flow with subjectively unremarkable structure. Subjective assessment of the **right atrium** and auricle revealed normal size, structure and content. No evidence of masses was noted. **Tricuspid** valvular assessment demonstrated expected findings for this age patient. The **right ventricle** was of normal size (1/3 diameter of LV), echogenicity and thickness. **Pulmonic** tract assessment revealed normal valve structure, laminar flow, and diameter (approx.1:1 pa/ao ratio). No dilation due to heartworm disease, cor pulmonale, stenosis, or pulmonic hypertension was noted. No evidence of systolic dysfunction or clinical pulmonary hypertension noted. No visible **pericardial** or overt free pleural fluid was noted. The **mediastinum** was free of masses in the visible window.

Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of – cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with no uroliths or sediment. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes were noted.

Normal renal size with asymmetrical margination was present in both kidneys. The renal cortex presented uniformly mildly increased in echogenicity with uniform echotexture. The renal cortex



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appeared to be mildly hypertrophied resulting in an altered cortex: medulla ratio. Mild loss of corticomedullary distinction was also present. The renal medullary volume was subjectively reduced. The left kidney measured 4.4 cm. The right kidney measured 4.2 cm.

Adrenal Glands

No overt pathology in the area of the left and right adrenal gland.

Spleen

The spleen exhibited primarily finely textured parenchyma which was hyperechoic to the liver and renal cortical parenchyma. Mild generalized parenchyma heterogeneity was present without evidence of nodular changes. 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. The parenchymal heterogeneity is likely consistent with benign changes such as extramedullary hematopoiesis or age related remodeling with minor potential for inflammatory or neoplastic disease. The spleen measured 0.85 cm in width.

Liver

The liver was subjectively normal in size, structure, and contour. The liver parenchyma was mildly nonuniform and hypoechoic to the spleen with a moderate coarse echotexture and subjective mild to benign parenchymal remodeling. The hepatic and portal vasculature were normal in appearance without signs of congestion. A solitary echogenic to cystic nodule was noted in the mid to right liver adjacent to the gallbladder, yet without evidence of gallbladder impingement or overt obstruction to biliary outflow, measuring 3.2 cm diameter. The gallbladder exhibited normal size with anechoic content. Moderate dilation of the biliary cystic duct was present containing anechoic content. Biliary cystic duct measured 1.2 cm diameter. The common bile duct was 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

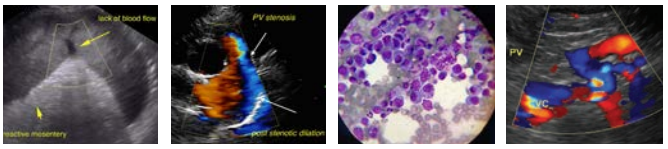
The parenchyma of the left limb, body and right limb of the pancreas presented isoechoic to the adjacent omental fat. A normal curvilinear capsule contour of the pancreas was present. The visible pancreatic duct was normal. No signs of active inflammation or neoplastic disease was evident.

Free Abdomen

No evidence of intraabdominal masses, lymphadenopathy or effusion.

ULTRASONOGRAPHIC FINDINGS

- Overtly normal cardiac structure and function for age with borderline IVS and LV free wall hypertrophic changes
- Normal left atrium
- Bilateral moderate chronic renal changes



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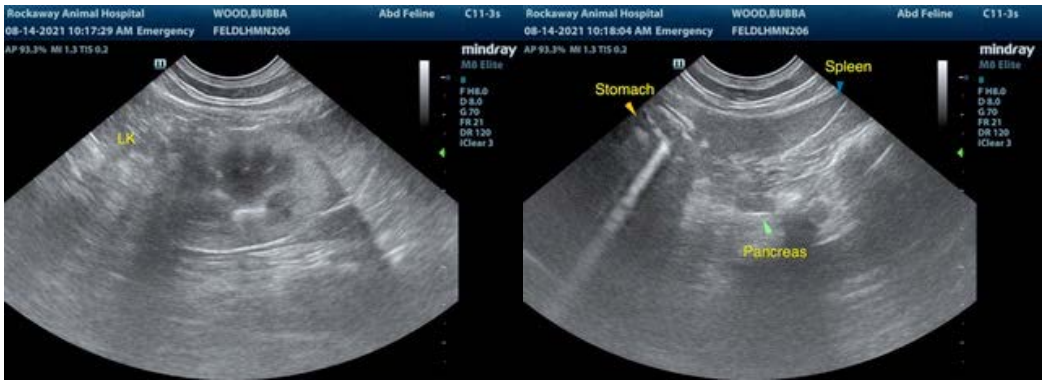
- Cystic liver nodule – consistent with probable benign cystic biliary adenoma
- Mild non-specific cystic biliary duct dilation – likely incidental if no evidence of cholestasis, age related cystic biliary duct dilation with potential for mild cystic biliary duct inflammation if previous or current history of hepatic enzyme elevations.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The borderline IVS and LV free wall hypertrophic changes are non-specific. Potential for emerging hypertrophic cardiomyopathy may be considered, yet is not definitive, and a rule out diagnosis assuming no evidence of systemic hypertension and normal hydration. Potential for mild pseudohypertrophic changes owing to Lasix therapy also possible. Regardless, the lack of left atrial enlargement, systolic dysfunction, or left or right heart volume overload indicate that the respiratory distress and pleural effusion in this patient are non-cardiogenic in origin. Ideally, pleural effusion analysis, cytology +/- culture and sensitivity is recommended for further clarification.



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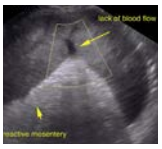
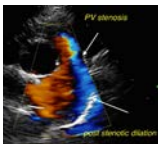
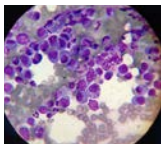
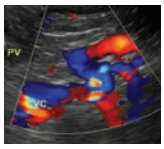

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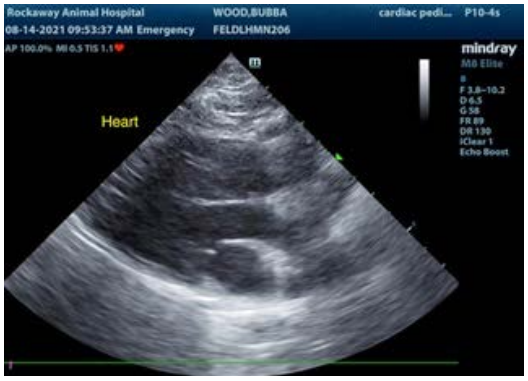

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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