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Clinical Sonography & Telecytology
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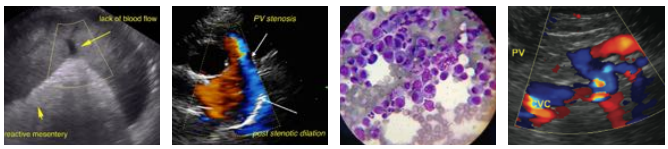

SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT
Charlie Francis

SPECIES
Canine

BREED
Toy Poodle

SEX
Neutered male

AGE
9 years

WEIGHT
3.3 kg

INTERPRETED BY
Eric Lindquist, DMV DABVP, Cert. IVUSS

IMAGING PERFORMED BY
Dr. Belan

HOSPITAL NAME
Chaparral VC

REFERRING VET
Dr. Gadzheva

INVOICE
30011

DATE
4/28/22

PRESENTING CLINICAL SIGNS

Returned from Bahamas in last 48 hrs. Had exposure to a tick 10 days prior. Lethargic with weight loss. Patient has been on vaccination program for leptospirosis. Chest x ray mild cardiomegaly seen with abnormal shadow in the area of the aorta on the DV Two cavity scan Echo 64, ab 55 total 119 images. No murmur present. Initial blood work has alleviated suspicion of a tick born blood disease. Abnormal PE/Chem/CBC/UA Results: 4Dx run yesterday negative to ELISA PCR results pending. Moderate elevation of liver enzymes and severe elevation of bilirubin.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The **urinary bladder**, trigone, and pelvic urethra presented normal thicknesses and normal tone. Urethral mineralization was noted and embedded in the prostatic urethra. Calculus measured 0.14 x 2.0 mm. The ureters were not visible which is normal. A separate bladder calculus measured 0.23 cm. No evidence of inflammatory or neoplastic changes was noted. Ureteral papillae were normal.

The **kidneys** revealed largely normal size and structure, corticomedullary definition and ratio (cortex 1/3 of medulla) were essentially maintained with some age-related loss of curvilinear patterns regarding the capsule and C/M junction. The cortices presented largely uniform texture with some increased echogenicity expected for this age patient. Medullary structure differed distinctly from that of the cortex and no evidence of pelvic dilation was present. Mineralization was noted in the kidneys. The left kidney measured 3.16 cm.

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 0.29 cm. The left adrenal gland measured 0.36 cm.

Spleen

The **spleen** presented a smooth homogeneous parenchyma hyperechoic to liver and renal cortical parenchyma. The capsule was smooth without noticeable expansion or deviation from within the spleen or adjacent pathology. The splenic vasculature demonstrated normal volume without signs of congestion or thrombosis. No sonographic evidence of acute or chronic inflammatory, neoplastic, or infarctual changes was noted.

Liver

The **liver** images from right and left intercostal as well as subcostal views revealed subjectively normal liver size, contour, and structure. Some age-related parenchymal remodeling was noted but likely not clinically significant at this time. Vascular and biliary tracts were of normal volume and no evidence of congestion was noted. The gallbladder was mildly over distended with suspended and dependent debris, yet not to the level of emerging mucocele. However, the sludge appears to be mildly excessive. No adjunctive inflammation was noted.

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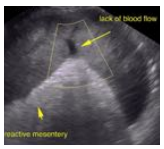
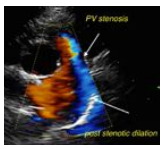
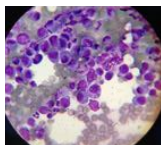
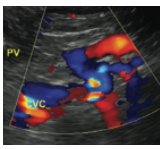

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Gastrointestinal

Examination of the **gastrointestinal tract** revealed a stomach and intestine free of stasis, of normal wall thickness, acceptable curvilinear mural detail, and peristaltic activity. Small and large intestine demonstrated normal luminal chyme and stool consistency respectively. No obstructive or overt infiltrative disease was noted. No associated abnormal lymphatic activity was noted.

Pancreas

The base and limbs of the **pancreas** were observed to be largely isoechoic to surrounding omental fat. Pancreatic duct and capsular contour were acceptably normal and parenchyma respected normal curvilinear patterns. No overt evidence of active inflammatory or neoplastic disease was noted.

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

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. The **right ventricle** revealed minor concentric hypertrophy. There was no significant **tricuspid** insufficiency present. **Pulmonic insufficiency** was noted in this patient and measured 2.8 m/sec. Post valvular pulmonary artery dilation was noted. 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.

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			1.15	1.3	64	93	0.1
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		1.0	1.2	3.3 kg	2.0	1.66	

ULTRASONOGRAPHIC FINDINGS

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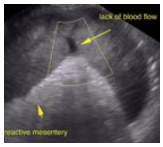

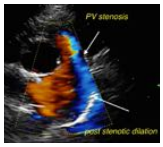

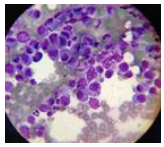
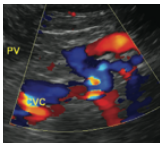

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Pulmonic insufficiency.

Post valvular pulmonary artery dilation.

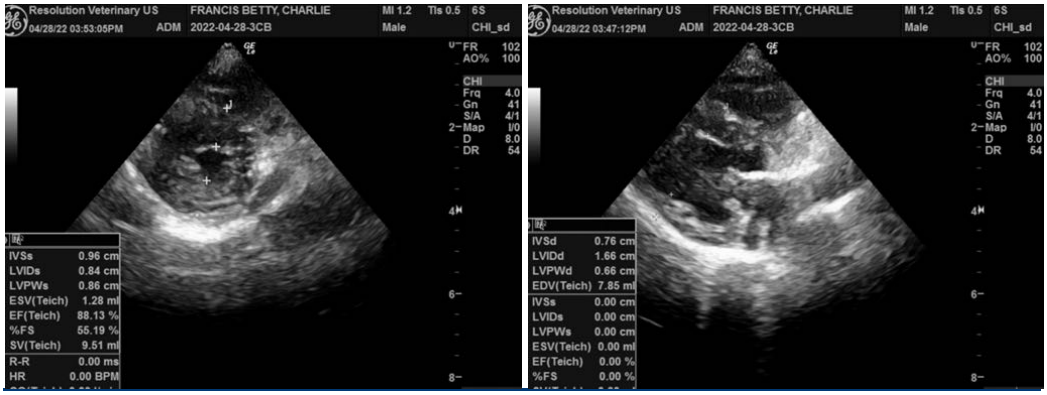
Geriatric abdomen of the bladder and proximal urethral calculi/sand.

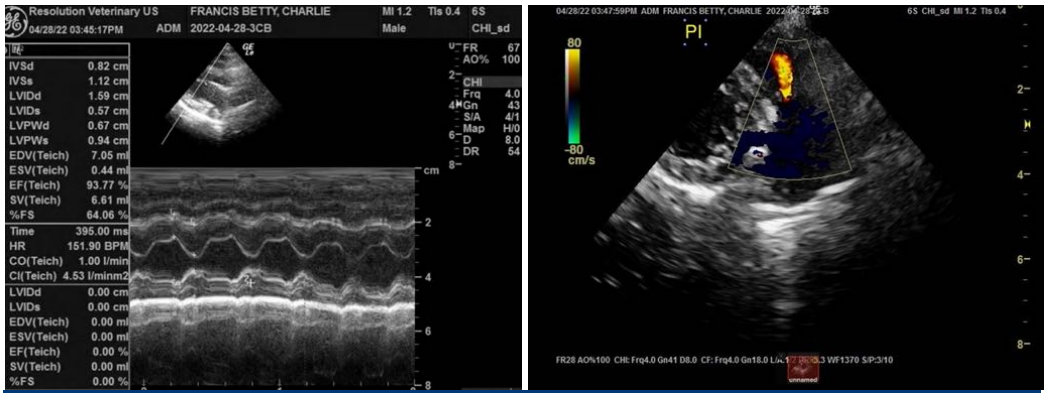
Excessive gallbladder debris.

Renal calculi.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The patient is likely passing calculi from the kidneys to the bladder periodically. The cause of the deep pulmonary artery dilation is unclear. Primary respiratory disease or heartworms should be considered. Pulmonic insufficiency is significant, yet stable at this time. Chest radiographs are warranted as well as urinary work-up. If the clinical signs are episodic then passage of calculi and periodic obstructive urinary disease may be an issue.





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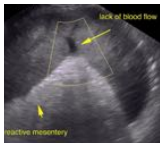
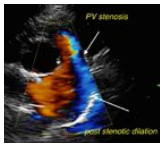
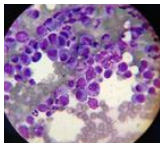
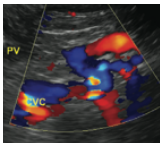

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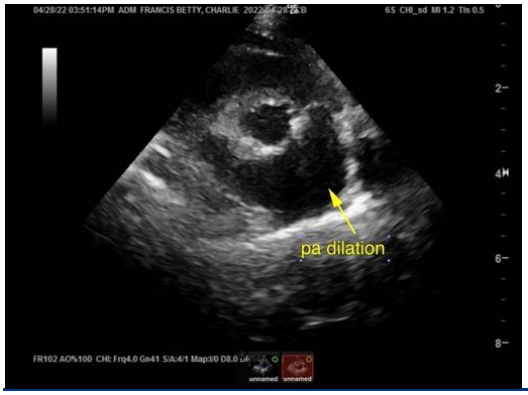

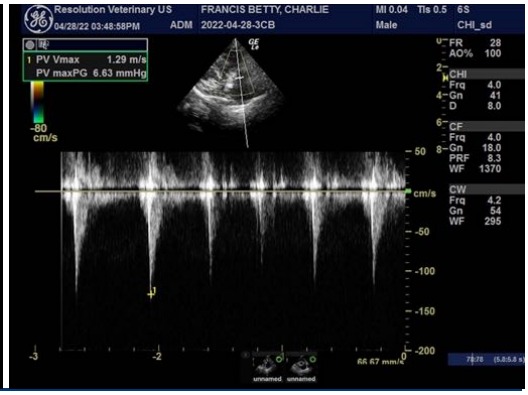

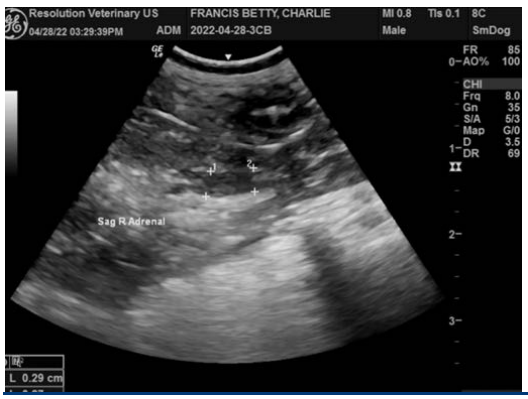

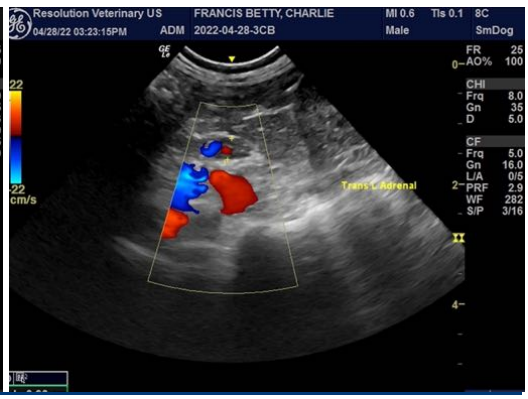

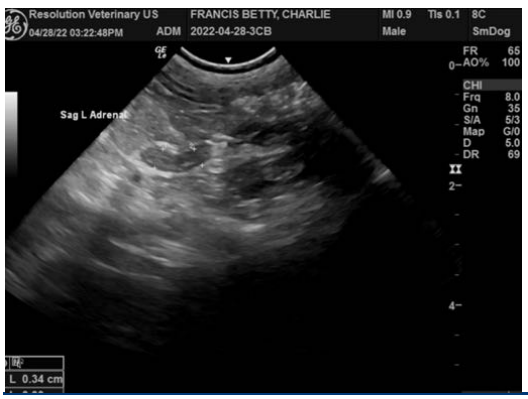

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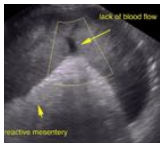
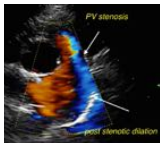
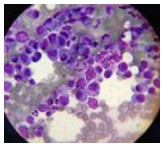
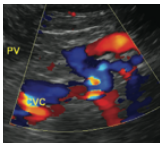

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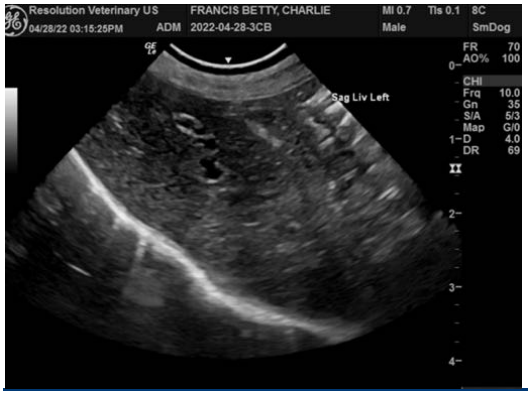

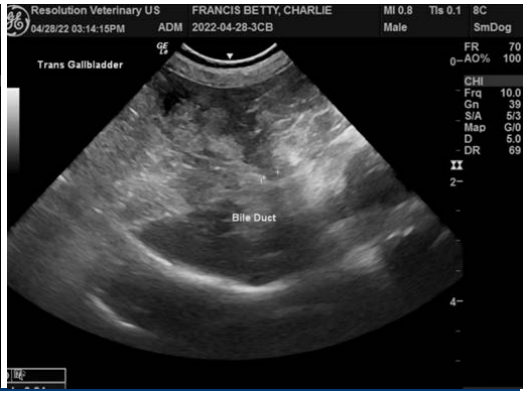

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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