



PATIENT PRESENTING CLINICAL SIGNS

Chloe Amato heart mass, vomiting

SPECIES

Canine

ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

BREED

Mix

SEX

SF

AGE

9

WEIGHT

38

INTERPRETED BY

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

IMAGING PERFORMED BY

Jenn

HOSPITAL NAME

Rockaway AH

REFERRING VET

Dr. Bendar

INVOICE

12854

DATE

12/18/21

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	<1.6	28-40	40-100	<0.6
PATIENT			--	1.1	54.2	89.3	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	BELOW	BELOW	BELOW	BELOW
PATIENT	205	--	1.4		3.4	3.25	

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, pericardial and extra-cardiac regions** were free of overt masses in the visible window. Tachycardia was present.

Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2.0 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 was noted.



PATIENT	The area of the aortic trifurcation was free of pathology.
Chloe Amato	
SPECIES	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. No evidence of pelvic dilation was present. The left kidney measured 5.6 cm in length. The right kidney measured 6.3 cm in length.
Canine	
BREED	Adrenal Glands
Mix	The area of the left adrenal gland was free of overt pathology. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 3.3 cm length x 0.85 cm width at the caudal pole.
SEX	Spleen
SF	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.
AGE	Liver/ Gallbladder
9	The liver exhibited subjective mild generalized enlargement with generalized parenchymal remodeling and mild heterogeneity. Multiple, Indistinct, nonhomogeneous, ovoid, intraparenchymal nodules were present. An example of a liver nodule measured 2.6 cm and 3.0 cm in diameter.
WEIGHT	The gallbladder was non distended in size with echogenic, nonmineralized, non dependent biliary sludge. The biliary sludge was non organized with a hypoechoic to anechoic, irregular to interrupted rim visible between the nondependent sludge and inner wall. No signs of peripheral inflammation. The cystic and common bile ducts were normal.
38	Gastrointestinal
INTERPRETED BY	The stomach presented intact wall layering with mild prominent pyloric layering present and mild retained anechoic pyloric fluid. The pylorus wall width measured 0.50 cm.
R. McKenzie Daniel, DVM, DABVP (Canine and Feline)	The duodenum exhibited intact yet subjective mild prominent wall layering exhibiting propensity for decreased mucosa echogenicity. Generalized mild nonobstructive duodenal ileus was present. The jejunum and ileus to the level of the colon were sonographically unremarkable without evidence of jejunoileal mechanical / metabolic ileus. The duodenum wall width measured 0.36 cm.
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INVOICE	Normal visible colon wall layers were present with apparent formed feces in lumen.
12854	Pancreas
DATE	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.
12/18/21	



PATIENT

Free Abdomen

Chloe Amato

No overt lymphadenopathy or peritoneal effusion was present.

SPECIES

ULTRASONOGRAPHIC FINDINGS

Canine

Primary Findings

BREED

- Overtly normal cardiac structure and function - no overt cardiac mass or pericardial effusion was visualized

Mix

- Tachycardia

SEX

- Subjective hepatomegaly exhibiting multiple, nonhomogeneous, intraparenchymal nodules

SF

- Gastroduodenitis

AGE

- Early to emerging gallbladder mucocele

9

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

WEIGHT

The tachycardia in this patient may be owing to stress / anxiety, pain, if possible, although cardiac arrhythmia cannot be definitively excluded. ECG assessment is recommended if persistent tachycardia is noted. An overt cardiac / pericardial mass or evidence of pericardial / pleural effusion were not present in this study. The liver appeared to be noted directly adjacent to the left heart in transdiaphragmatic view. If strong clinical concern for non-visualized mass, advanced Imaging such as thoracic CT may be indicated. No indication for cardiac medications was noted.

38

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The hepatic nodule may indicate areas of nodular / regenerative hyperplasia, lipogranulomas, or similar benign process, while the possibility of primary vs. metastatic neoplastic nodules cannot be excluded. Assuming normal clotting status, ultrasound-guided FNA of a hepatic nodule, as well as hepatic parenchyma, using a 25-gauge needle is warranted for screening cytology. Sonographic monitoring of the hepatic nodules for evidence of progression would be a more conservative approach. Likewise, monitoring for evidence of increasing cholestasis or cranial abdominal / subxiphoid pain on palpation is recommended. If these clinical signs are noted, recheck sonogram of the gallbladder would be indicated. Hepatosupportive medications including Denamarin are recommended.

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Supportive care for gastroduodenitis is recommended.

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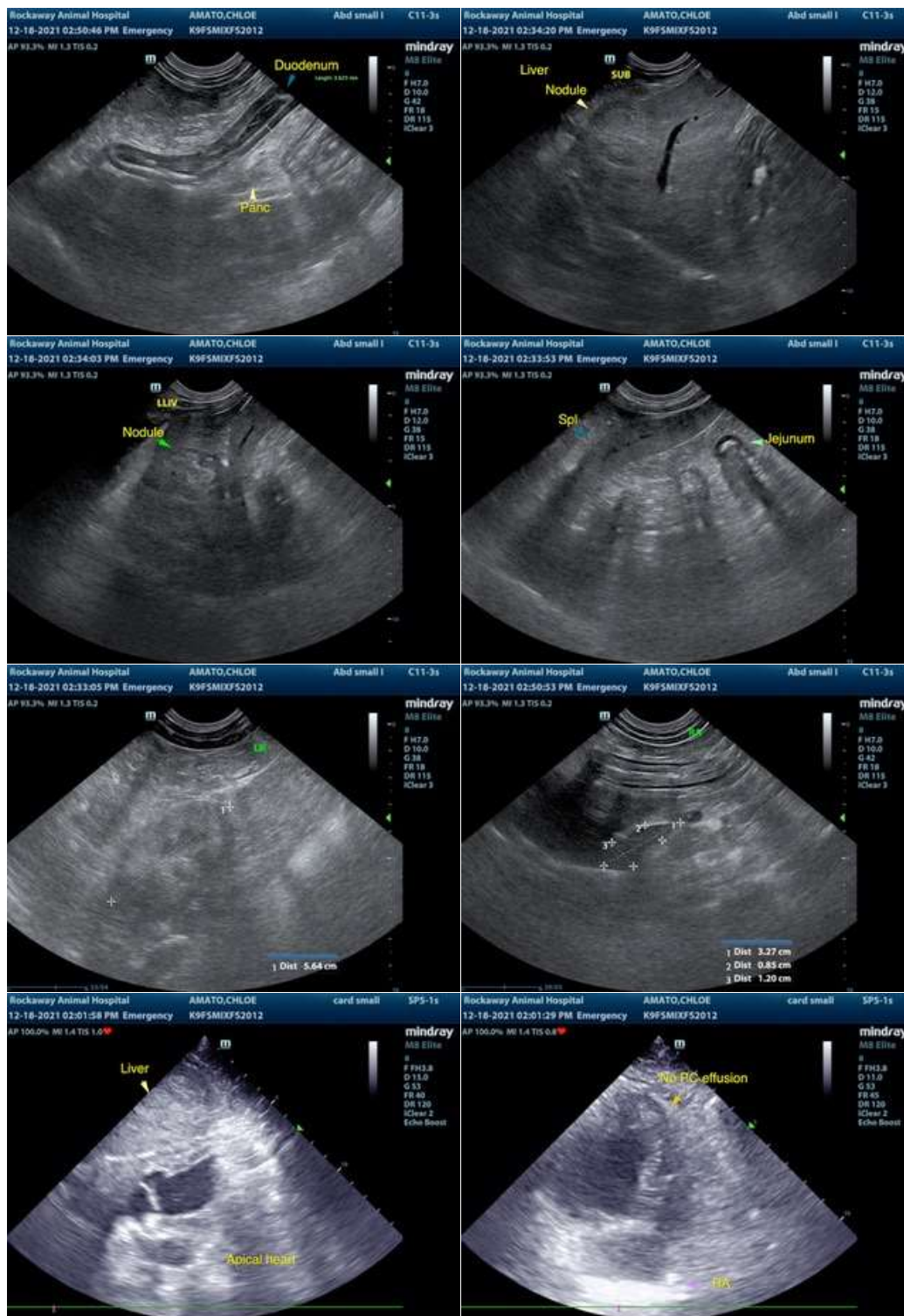
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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SonoPath CT Services are offered at the [Blairstown Animal Hospital](https://www.blairstownanimalhospital.com/). Blairstown animal hospital is just a 30-minute drive west on route 80 from the route 80/287 interchange/Parsippany, New Jersey. More information can be found at:

<https://sonopath.com/resources/sonopath-teleconsultation-services-and-sdep-certification/sonopath-ct-services>