



PATIENT

Milo Davis

SPECIES

Canine

BREED

Mix

SEX

MN

AGE

7 years

WEIGHT

78.5 lbs.

INTERPRETED BY

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

IMAGING PERFORMED BY

Shari Reffi, CVT

HOSPITAL NAME

Shohola

REFERRING VET

Dr. Gramazio

INVOICE

12885

DATE

12/28/21

PRESENTING CLINICAL SIGNS

Seen at emergency clinic and found bi-cavity effusion. Decreased appetite, pu;pd. Current meds: Furosemide 20mg 2 bid.

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	<1.6	28-40	40-100	<0.6
PATIENT			--	1.25	32.5	64.4	0.3
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	125	1.0	0.8		4.5	4.0	

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 mild increased size with normal content and without evidence of spontaneous contrast. Homogeneous mass lesion was present in the area of the heart base and potentially within the area of the right auricle, measuring approximately 6.0 cm x 3.5 cm. Diastolic collapse of the right atrium free wall consistent with cardiac tamponade was present. **Tricuspid** valvular assessment demonstrated adequate linear morphology and kinesis. The **right ventricle** exhibited subjective mild increased size compared to left ventricle with normal myocardial echogenicity and overall thickness. **Pulmonary outflow** tract assessment revealed normal valve structure, laminar flow, and diameter (approx. 1:1 pa/ao ratio). Moderate **pericardial** fluid was present with potential for concurrent scant to minor free pleural fluid. The cranial **mediastinum and pericardial and extra-cardiac regions** were free of overt concurrent masses in the visible window.



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Urinary System

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The urinary bladder, trigone, and cystourethral junction 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.

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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 and normal corticomedullary definition were maintained. The echogenicity of the cortex was similar to or slightly less than normal liver parenchyma while the medulla echogenicity was hypoechoic to the cortex with no evidence of pelvic dilation. The left kidney measured 6.1 cm in length. The right kidney measured 6.9 cm in length.

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Adrenal Glands

The left adrenal gland was not definitively visualized owing to the presence of peritoneal free fluid.

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The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 2.0 cm length x 0.53 cm width at the caudal pole.

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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. The spleen was mildly subnormal in size potentially owing to volume contraction. No evidence of splenic masses or neoplastic criteria was noted.

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Liver/ Gallbladder

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The liver presented enlarged in size with symmetrical yet swollen contour. The parenchyma exhibited conserved uniform parenchyma with normal echogenicity isoechoic to the spleen and falciform fat. Dilation of the cranial abdominal caudal vena cava at the level of the liver and diaphragm measuring 1.4-1.5 cm in diameter and without evidence of thrombosis was present. The gallbladder was non-distended in size with thin walls and primarily anechoic luminal content. The cystic and common bile ducts were normal.

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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.

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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.



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Pancreas

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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.

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Free Abdomen

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Moderate to significant, subjectively mildly cellular peritoneal free fluid exhibiting minor cellular component was present. No overt evidence of omental masses or lymphadenopathy was noted.

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ULTRASONOGRAPHIC FINDINGS

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Primary Findings

- Moderate pericardial effusion with secondary cardiac tamponade - highly suspect mass in the area of the heart base or potential right atrium / auricle, blood clot if hemopericardium possible, yet thought less likely
- Congestive hepatopathy
- Volume contracted spleen - no evidence of splenic neoplastic criteria
- Moderate peritoneal free fluid with mild cellular component

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

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Highly suspect heart base or right auricle / auricular neoplasia with secondary pericardial effusion and cardiac tamponade resulting in congestive hepatopathy and concurrent ascites. Pericardial fluid analysis obtained during pericardiocentesis could be considered for cytology. Hemangiosarcoma, given the location of the suspected tumor, is considered a primary differential diagnosis with less likely potential for other neoplastic processes or pericardial blood clot.

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No cardiac medications are clearly indicated at this time. Over-the-counter herbal supplement Yunnan Baiyao may help decrease the risk of bleeding. However, the true benefit is speculative. Referral for advanced imaging could be considered with oncology or surgical consultation. Very guarded to unfavorable long-term prognosis indicated. As needed pericardiocentesis may be required.

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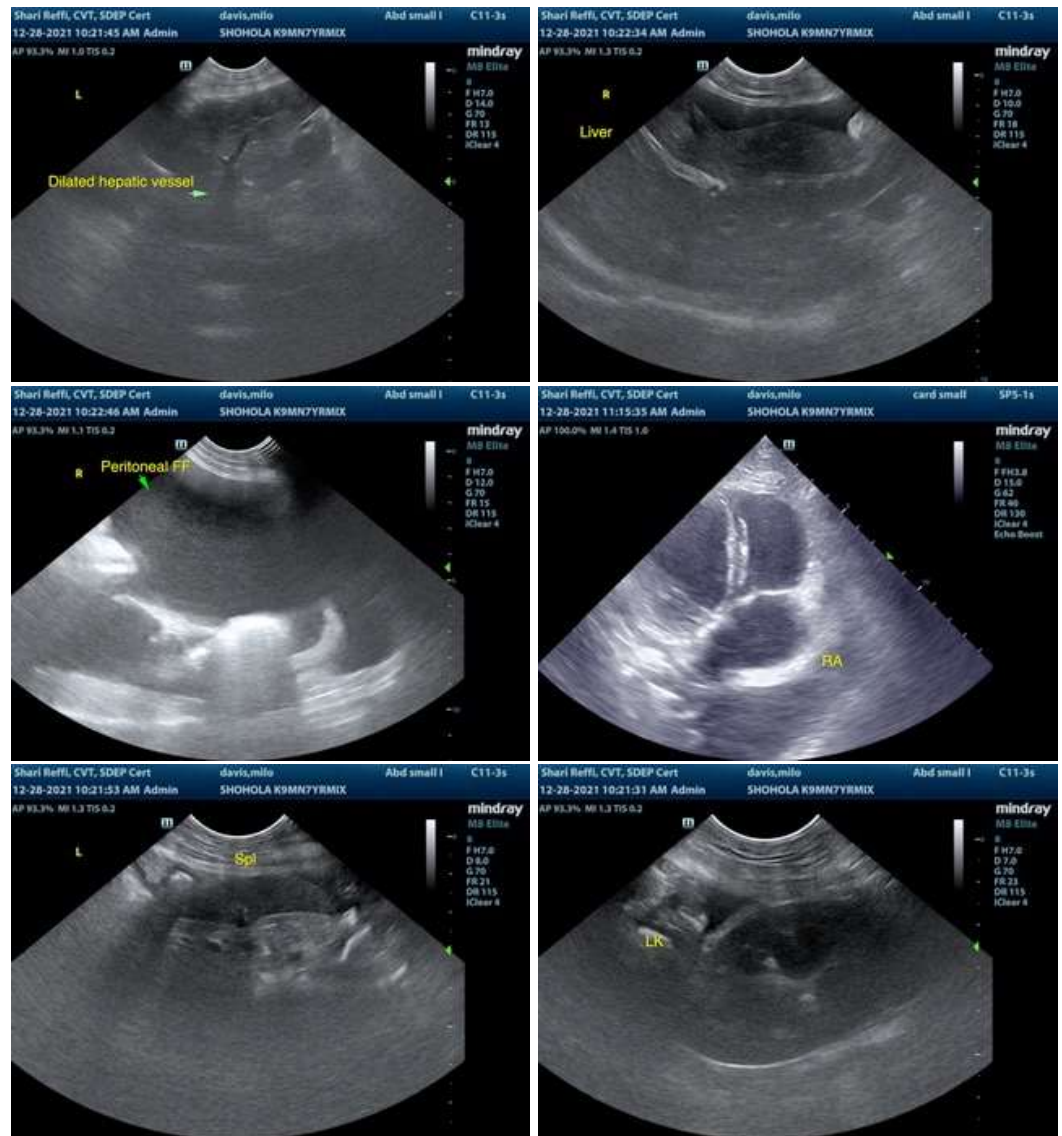
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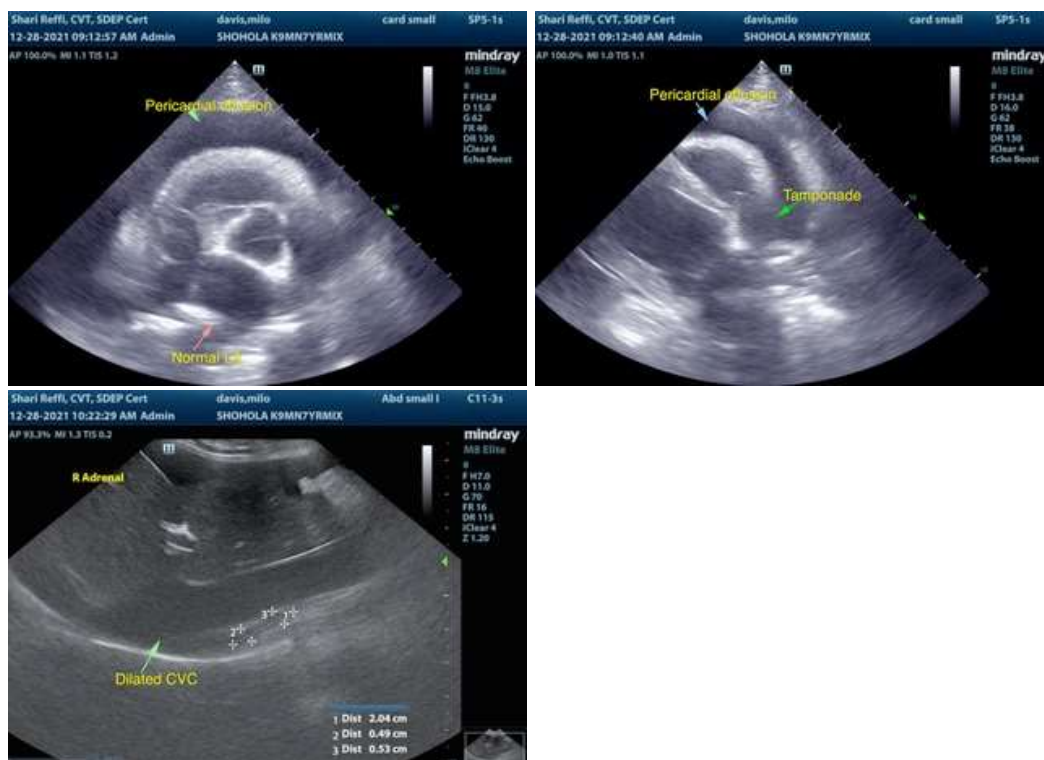
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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