

PATIENT PRESENTING CLINICAL SIGNS

Nora Spickerman

SPECIES

Canine

BREED

Boxer

SEX

Spayed Female

AGE

7 Years

WEIGHT

60 Pounds

INTERPRETED BY

Eric Lindquist, DMV

DABVP, Cert. IVUSS

cutaneous mast cell tumor Medications-Incurin every other day
Abnormal PE/Chem/CBC/UA Results: cbc/ chem/ t4/ ua wnl ecg-vent arrhythmia IDEXX ECG report- HEART RATE AND RHYTHM: Heart Rate: 154 Heart Rhythm: Sinus, isolated VPC Is this a Pre-operative / pre-anesthetic ECG?: Yes Was the patient in right lateral recumbency for this ECG?: Yes Was this patient ausculted by a veterinarian prior to the ECG today?: Yes Was an arrhythmia noted on physical exam?: No Heart Murmur: None Is a gallop rhythm present?: No Is patient on an anti-arrhythmic (Sotalol, Atenolol, Diltiazem or Digoxin)?: No Was atropine or glycopyrrolate administered prior to this ECG?: No Was the patient sedated prior to this ECG?: No Anxiety/nervousness of this patient during this ECG transmission: Average Anxiety Was an alpha-2 agonist (Domitor or Xylazine) given prior to this ECG?: No ECG AND CLINICAL ASSESSMENT: ECG waveform's amplitude and duration are within normal limits. A ventricular arrhythmia is noted. Ventricular arrhythmias occur in many clinical settings, generally divided into cardiac and non-cardiac causes. Cardiac conditions include structural heart disease, pericardial effusion/cardiac neoplasia, and rarely myocarditis. Non-cardiac causes are common and include splenic disease, metabolic disease, electrolyte disturbances, tick-borne disease, fever, anemia, trauma, GDV, hepatic disease, GI disease, pancreatitis, DIC, and sepsis. The arrhythmia is relatively low-grade on this ECG and does not pose a contraindication to general anesthesia. However, changes in autonomic tone, as experienced during anesthesia, may worsen the arrhythmia. DIAGNOSTIC RECOMMENDATIONS: The ventricular arrhythmia could indicate underlying heart disease or may be secondary to non-cardiac disease. Depending on specific clinical history and physical examination findings, the diagnostic evaluation may include blood work, abdominal ultrasound, thoracic radiographs, and/or echocardiography. OVERALL RECOMMENDATIONS: Recommend avoiding alpha-2 agonists, ketamine, or Telazol in the anesthetic protocol. Consider premedication with an opioid/benzodiazepine and induction with propofol, etomidate, or alfaxalone (preferred, if available). Heart rate, cardiac rhythm, pulse oximetry, and blood pressure should be monitored during the procedure, if possible. During anesthesia, lidocaine (i.e., 2mg/kg IV bolus over 1 min) should be available to administer if ventricular tachycardia or frequent and severe ventricular arrhythmias develop. Chest rads unremarkable.

ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

IMAGING PERFORMED BY

Jenna Walsh, CVT

HOSPITAL NAME

Edgewood AC

REFERRING VET

Dr. Callahan

INVOICE

35948

DATE

2/26/22

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			1.11	1.3	30	80	NM
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	110	1.34	--		3.09	2.6	



PATIENT *Cardiac Presentation*

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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. Aortic insufficiency noted at 3+ m/sec. 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.

Urinary System

The **urinary bladder**, trigone, and pelvic urethra presented normal thicknesses and normal tone. The ureters were not visible which is normal. No uroliths or sediment were visualized and anechoic urine was present. No evidence of inflammatory or neoplastic changes were noted. Ureteral papillae were normal.

The **kidneys** revealed normal size and structure, corticomedullary definition and ratio for this age. The cortices presented largely uniform texture with normal echogenic relationship to liver and spleen. Medullary structure differed distinctly from the cortex and no evidence of pelvic dilation was present. The capsules were acceptably uniform without significant irregularities. The left kidney measured 7.14 cm. The right kidney measured 7.06 cm.

Adrenal Glands

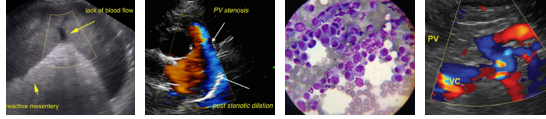
Both **adrenal glands** were visualized and recognized as having normal shape, size, position and echogenicity for this breed. The phrenic vasculature, glandular echogenicity and detail were unremarkable. Capsule, cortex, and medullary definition were normal for this age patient. The right adrenal gland measured 2.42 cm x 0.56 cm at the cranial pole and 0.43 cm at the caudal pole. The left adrenal gland measured 2.5 cm x 0.45 cm at the caudal pole and 0.53 cm at the cranial pole.

Spleen

The **spleen** was mildly enlarged with slightly swollen contour. Subtle heterogeneous parenchymal changes noted. The spleen was folded upon itself cranially. This is likely a reactive state. However, given the patient history, 25-gauge FNA would be warranted with Benadryl injection 10-20 minutes prior to FNA.

Liver

The **liver** images submitted revealed subjectively normal liver size, contour, and structure. Parenchymal echogenicity was naturally coarse and hypoechoic to the spleen. Vascular and biliary tracts were of normal volume with no evidence of congestion. The gallbladder presented acceptably thin walls with primarily anechoic content. The cystic and common bile ducts were normal. No pathological hepatic lymphadenopathy was evident. No overt structural evidence of inflammatory, infiltrative or regenerative pathology was evident.



PATIENT *Gastrointestinal*

Nora Spickerman

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.

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Pancreas

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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.

SEX

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ULTRASONOGRAPHIC FINDINGS

- Normal echocardiogram with minor aortic insufficiency
- Minor splenic enlargement with slight swollen contour – likely reactive hyperplasia.

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Blood pressure measurements recommended. No evidence of functional cardiac disease. Given the patient history, FNA of the spleen warranted to screen for mast cell disease. No evidence of other pathology in the abdomen or heart.

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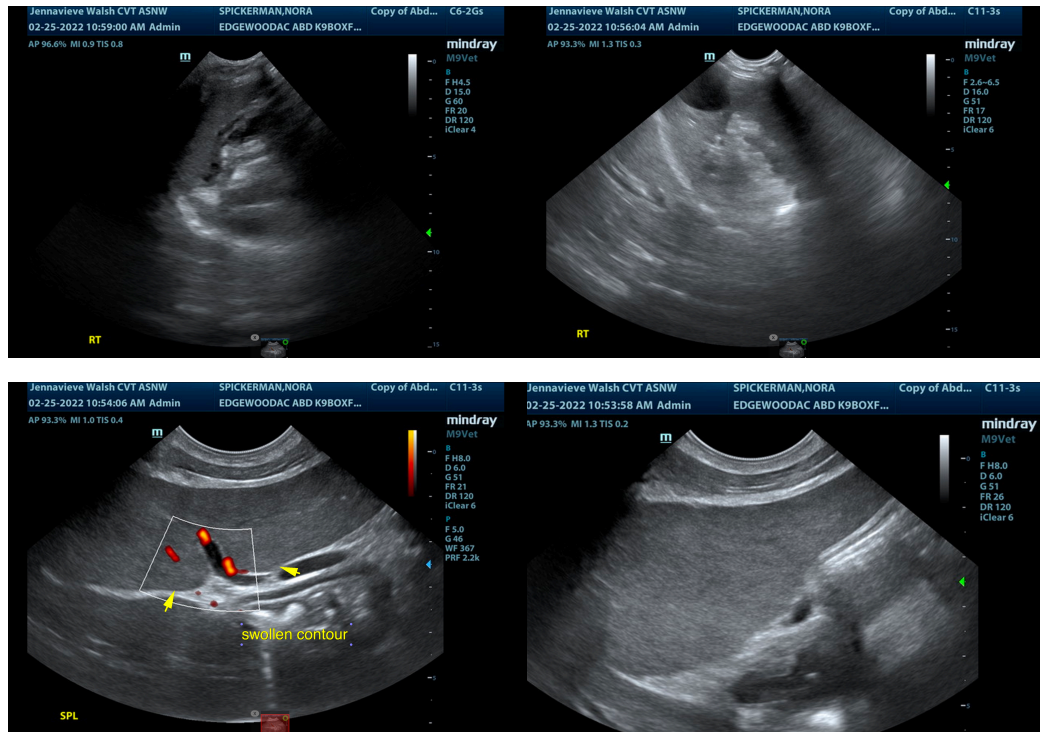
Dr. Callahan

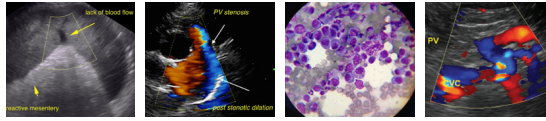
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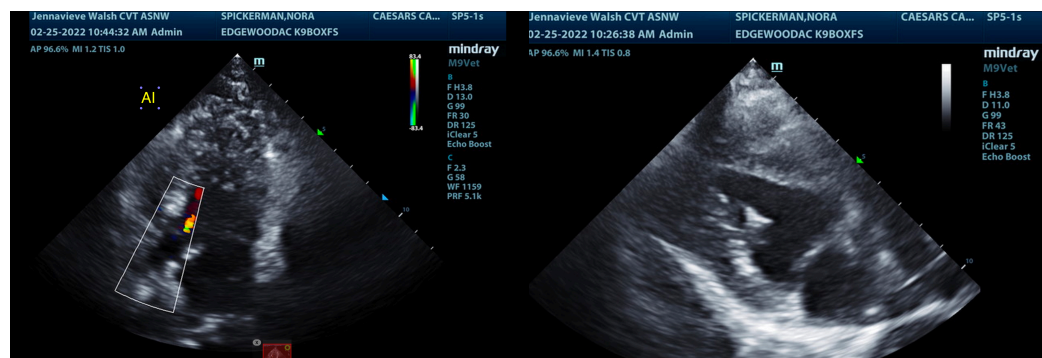
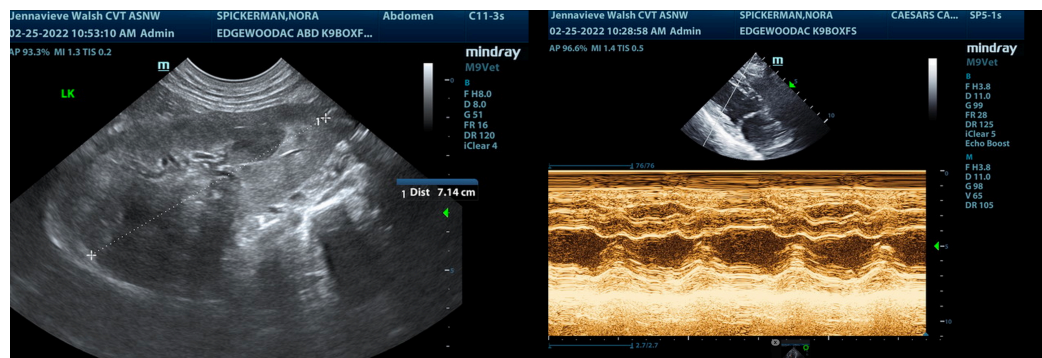
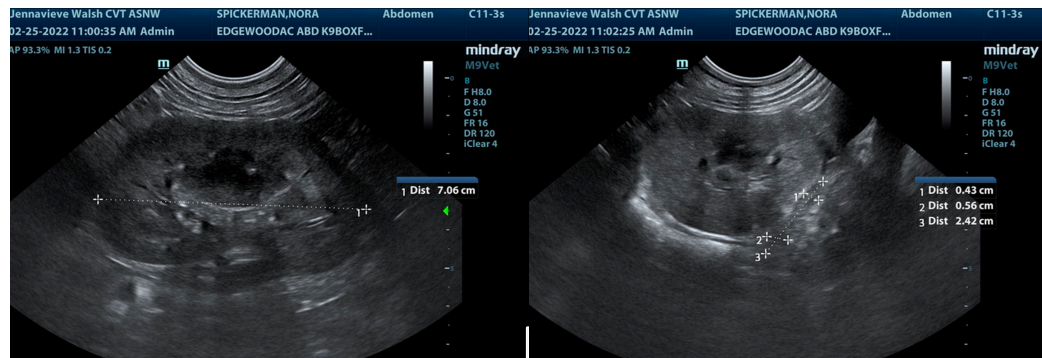
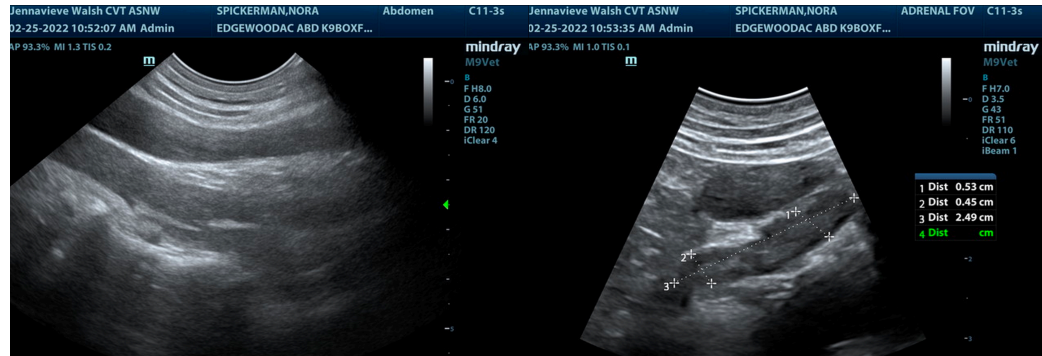
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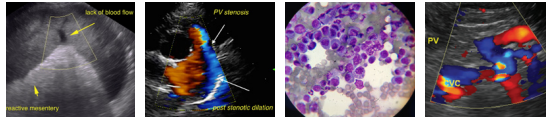
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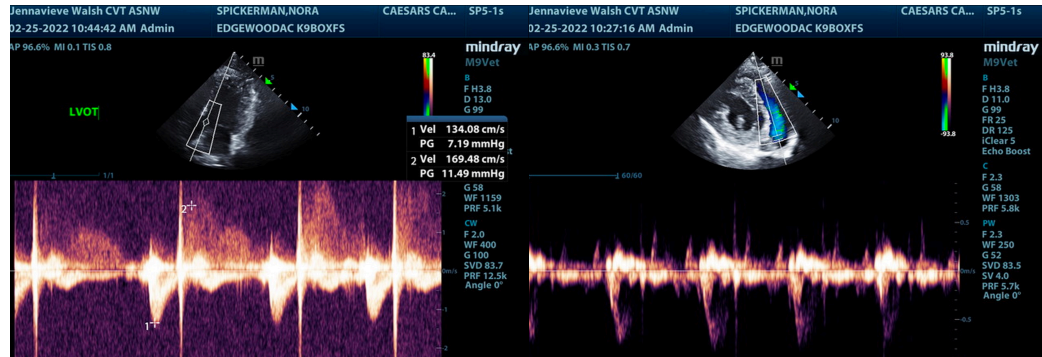
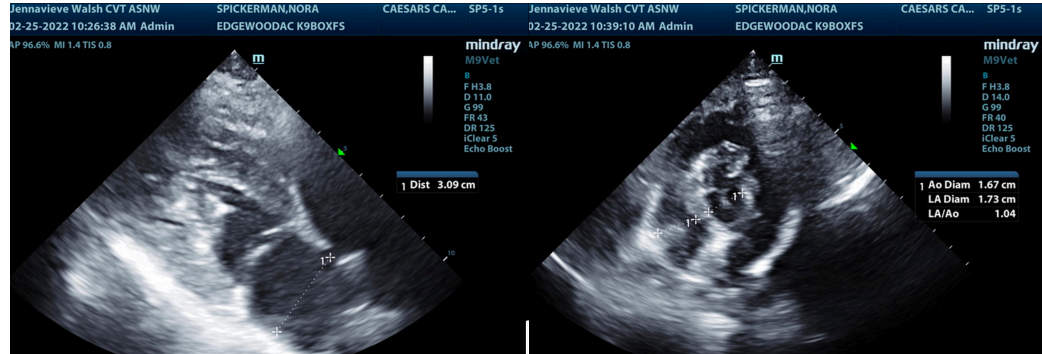
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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

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