



PATIENT

Buster Zeither

SPECIES

Canine

BREED

Boxer Mix

SEX

Neutered male

AGE

11 years

WEIGHT

74.5 lbs

PRESENTING CLINICAL SIGNS

History: Shaking, panting, decreased energy, not going on long walks anymore. Current meds: carprofen prn

Abnormal PE/Chem/CBC/UA Results: PLT 514, ALT 193, ALP 288, Cholesterol 479, precision PSL 206 UA: pH 8, protein 4+, MA>30 SG: 1.035

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 normal 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 and pericardial and extra-cardiac regions** were free of masses in the visible window.

INTERPRETED BY

Eric Lindquist, DMV
DABVP, Cert. IVUSS

IMAGING PERFORMED BY

Jessica Miller, RDMS

HOSPITAL NAME

Newton VH

REFERRING VET

Dr. Kim

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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			1.18	1.18	48	80	0.2
CANINE CARDIAC PARAMETERS	HR (BPM)	AV VMAX (m/s)	PV MAX (m/s)	BODY WEIGHT	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	129	1.8		74.5 lbs	3.1	3.47	



PATIENT **ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

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Urinary System

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The **urinary bladder** and visible pelvic urethra were unremarkable for the level of repletion presented. The urine, however, did present some mildly echogenic debris consistent with mucous, exfoliated cells from renal or bladder origin, and/or blood clots as these echogenic changes can all present similarly. This is often related to urinary tract infection but may represent simple evidence of exfoliated debris or sterile inflammation. Cystocentesis, urinalysis, +/- culture would be recommended to rule out and define any UTI.

BREED

Boxer Mix

The residual prostate measured 1.0 cm.

SEX

Neutered male

The **left kidney** 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 capsule was acceptably uniform without significant irregularities. The left kidney was uniformly enlarged at 8.8 cm. The region of the right kidney was imaged with no evidence of pathology, likely aplasia.

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Adrenal Glands

WEIGHT

74.5 lbs

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 2.8 x 0.79 cm at the caudal pole and 0.74 cm at the cranial pole. The left adrenal gland measured 2.75 x 0.76 cm at the caudal pole and 0.8 cm at the cranial pole.

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Spleen

IMAGING PERFORMED BY

Jessica Miller, RDMS

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.

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Liver

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Dr. Kim

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 presented some dependent debris with essentially normal contour. The cystic and common bile ducts were normal. No overt evidence of active inflammatory, infiltrative or regenerative pathology was noted but should be paired with current or past LE elevations regarding any clinical significance to this presentation. The hepatic lymph nodes were unremarkable.

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Gastrointestinal

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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. Iliac lymph node cysts were noted in the sublumbar/iliac space and measured up to 2.0 cm. These are non-pathological and likely owing to history of chronic lymphadenitis.

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Pancreas

Boxer Mix

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.

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Neutered male

ULTRASONOGRAPHIC FINDINGS

AGE

11 years

Normal echocardiogram.

Right renal aplasia, compensatory hypertrophy of the left kidney.

Unremarkable right adrenal gland.

WEIGHT

74.5 lbs

Bladder debris.

INTERPRETED BY

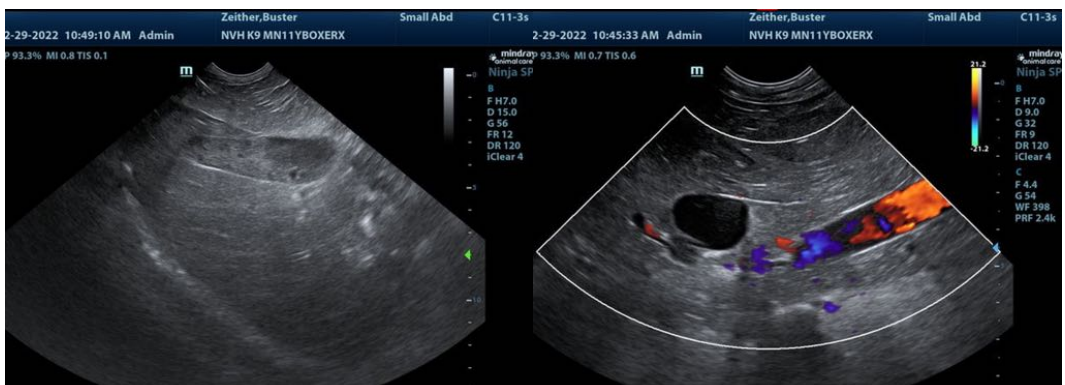
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Eric Lindquist, DMV
DABVP, Cert. IVUSS

Full urinary work-up is warranted. Blood pressure measurements are warranted, given the breed predisposition. Holter monitor is warranted to assess for arrhythmogenic disease causing exercise intolerance. This may be obtained from our office with cardiology review.

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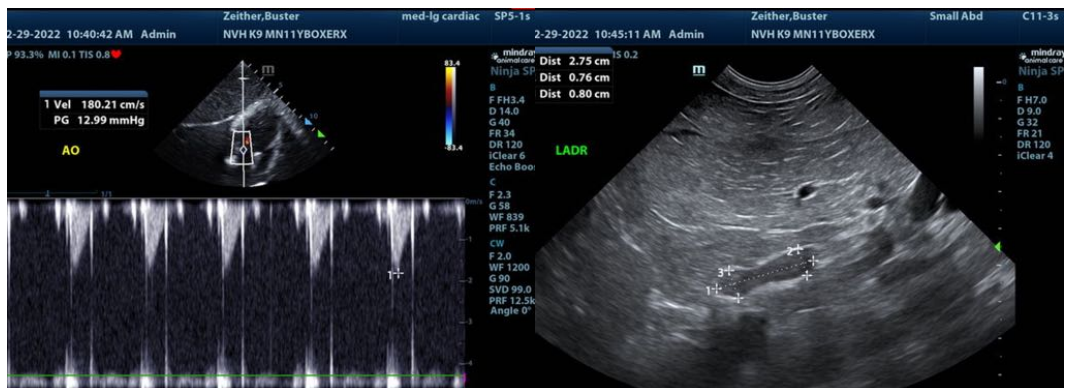
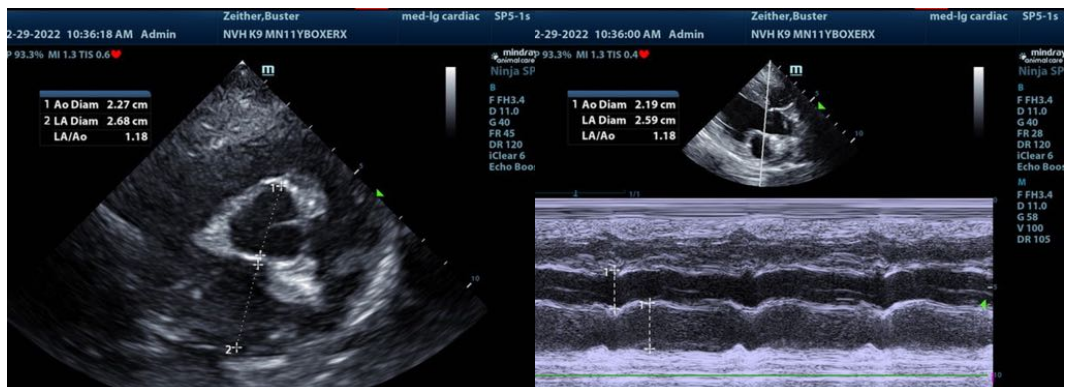
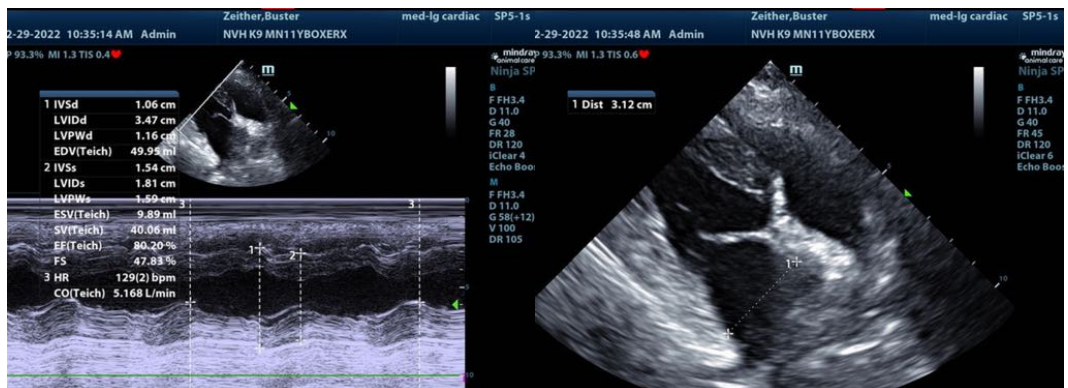
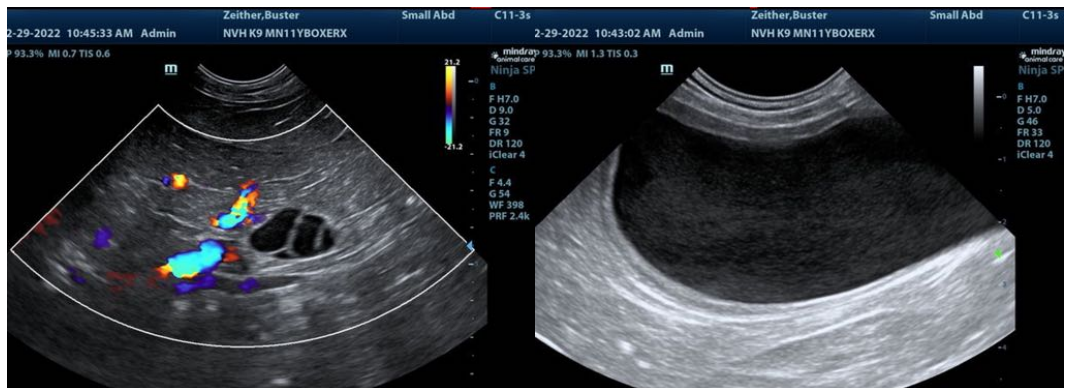
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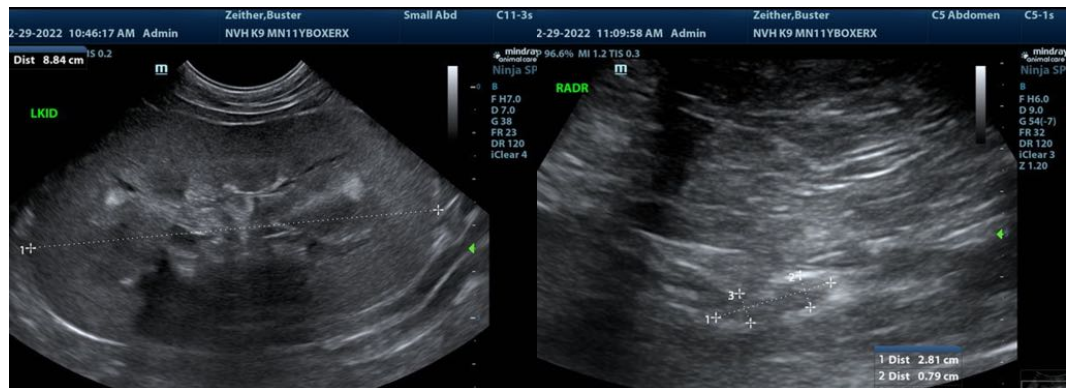
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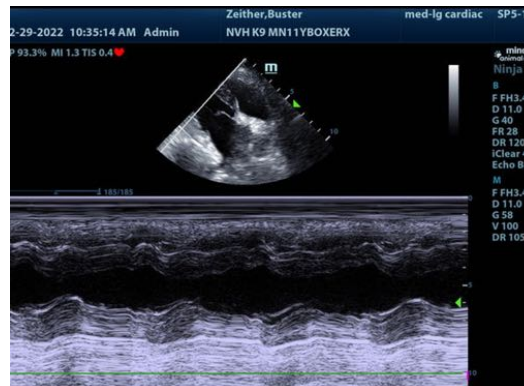
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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

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