



PATIENT

Thunder Chang

SPECIES

Canine

BREED

Havanese

SEX

Neutered Male

AGE

10 Years

WEIGHT

17.6 Pounds

INTERPRETED BY

Eric Lindquist, DMV,
 DABVP (Canine &
 Feline), Cert. IVUSS

IMAGING PERFORMED BY

Shari Reffi, CVT

HOSPITAL NAME

Rockaway AH

REFERRING VET

Dr. Maniar

INVOICE

35021

DATE

12/22/25

PRESENTING CLINICAL SIGNS

History: Recheck. Hx of pericardial eff., resolved. Doing well at home.
 Abnormal PE/Chem/CBC/UA Results: Pending

ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (M-Mode)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	Up to 1.6	28-40	40-100	<0.6
PATIENT	5.0	2.4	1.0	1.4	28	56	0.25
CANINE CARDIAC PARAMETERS	HR (BPM)	AV VMAX (m/s)	PV MAX (m/s)	BODY WEIGHT (lbs)	LAD LA MAX 4 Chamber	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	131	1.04	.75	17.5	--	2.7	--

Cardiac Presentation

The cardiac presentation in this patient presented moderate volume overload in the right atrium. Left atrial and left ventricular size was normal. Mitral and tricuspid insufficiency were noted, appeared largely compensated. No pericardial effusion was noted. Persistent arrhythmia was noted. The hepatic veins and vena cava were mildly dilated. Vena Cava measured 1.15 cm.

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 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. Slight mineralization was noted. The left kidney measured 4.76 cm. The right kidney measured 5.12 cm.



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Adrenal Glands

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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 left adrenal gland measured 0.51 cm at the caudal pole and 0.66 cm at the cranial pole. The right adrenal gland measured 0.74 cm at the cranial pole and 0.6 cm at the caudal pole.

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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 were noted.

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.

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 FINDINGS

- Bradyarrhythmia
- No evidence of pericardial effusion or masses at this time
- Compensated mitral and tricuspid insufficiency
- Slightly enlarged vena cava
- Age-related renal changes with slight mineralization

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

No specific therapy is warranted at this time; however, antiarrhythmic therapy may be necessary. The hepatic vein congestion and mild right sided enlargement may be secondary to the bradyarrhythmia.



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Recheck echocardiogram after control of the arrhythmia would be ideal.

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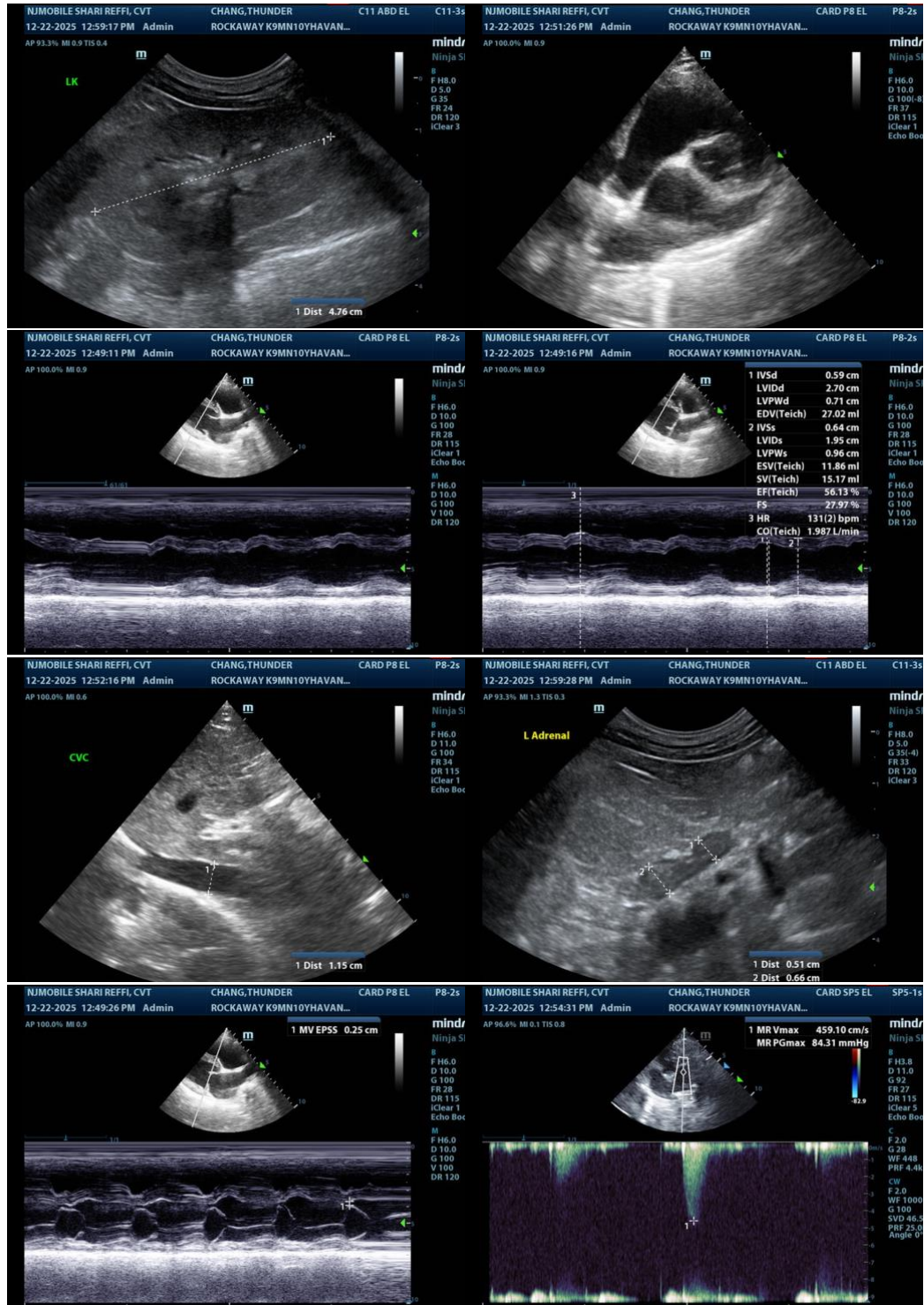
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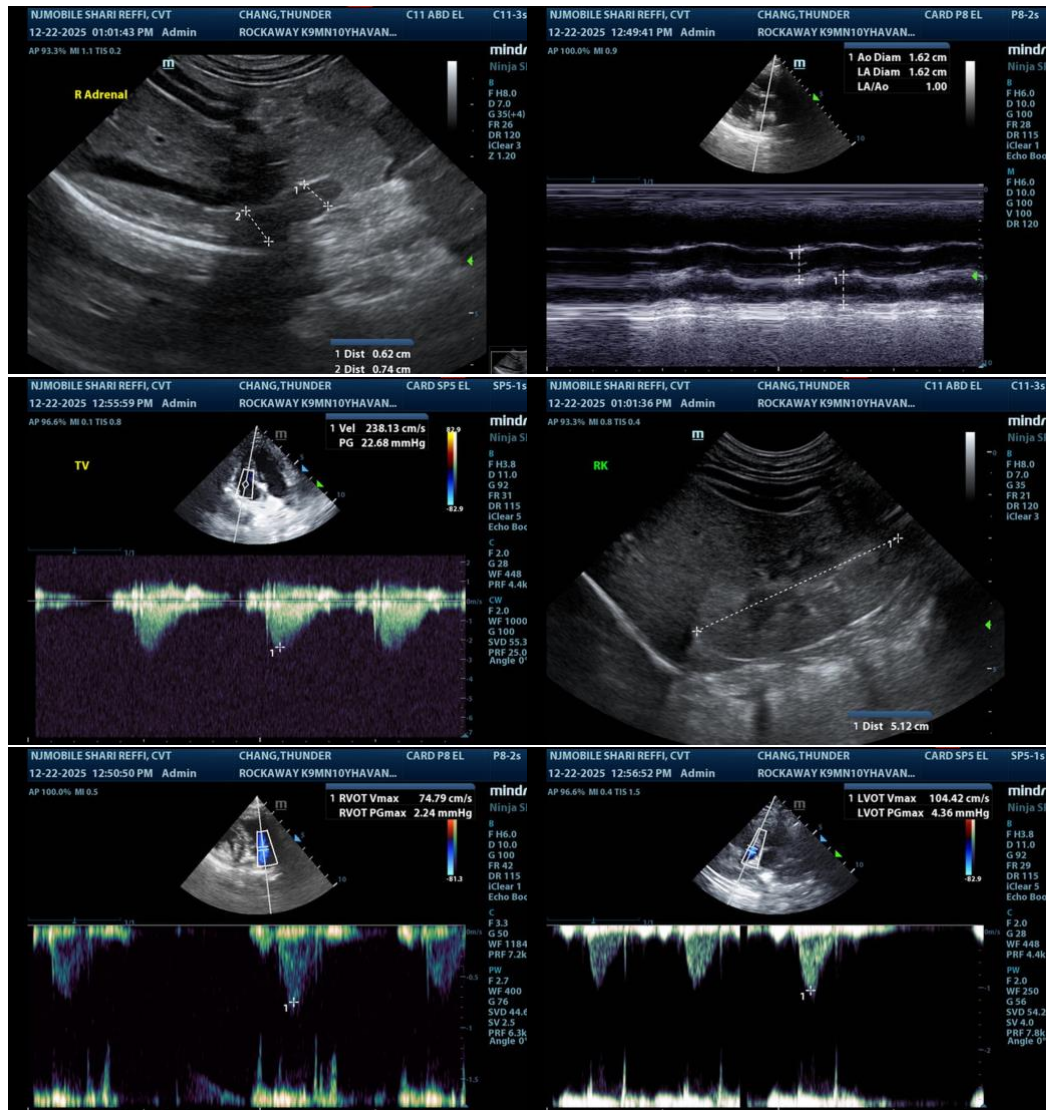
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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(CFM), Cert. IVUSS,
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