PATIENT

Lyla Pickard

SPECIES

Canine

BREED

Mixed

SEX

Spayed Female

AGE

12 Years

WEIGHT

17 Pounds

INTERPRETED BY

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

IMAGING PERFORMED BY

Vincent Ravancho, CVT

HOSPITAL NAME

Marsh HA

REFERRING VET

Dr. Megan Armani

INVOICE

35903

DATE

4/30/26

PRESENTING CLINICAL SIGNS

History: No murmur. Has had chronic cough/gag with minimal response to Flovent inhaler, Maropitant, Oral pred, Hydrocodone.

Abnormal PE/Chem/CBC/UA Results: AST 14, Chol 366, U/A - Protein 2+, USG 1.034

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	--	--	1.3	1.1	37	70	0.1
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	1.50	.74	17	2.7	2.16	--

Cardiac Presentation

The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 separate methods of LA evaluation. Trivial mitral insufficiency was noted in this patient, not clinically significant. 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 and pericardial and extra-cardiac regions** were free of masses in the visible window.

Urinary System

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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 pelvic urethra was imaged 3.0 cm beyond the cystourethral junction.

The **kidneys** revealed largely normal size and structure, corticomedullary definition and ratio (cortex 1/3 of medulla) were essentially maintained with some moderate 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. The right kidney measured 4.6 cm. The left kidney measured 4.03 cm.

Adrenal Glands

The **left adrenal gland** revealed a mass at the caudal pole, measuring 2.0 cm x 1.8 cm. The cranial pole measured 0.47 cm.

The **right adrenal gland** revealed a heterogenous, irregular and expansive nodule at the cranial pole, measuring 1.1 cm. The right gland measured 1.5 cm at the cranial pole and 0.48 cm at the cranial pole x 2.4 cm in length.

The vena cava and aorta were free of evident pathology. No evidence of vascular invasion, yet capsular expansion was present on both adrenal glands.

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 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 liver revealed a hypoechoic 2.0 cm nodule with minor cavitation in the left medial liver. Other subtle micronodular changes were noted in the liver. The gallbladder and common bile duct were unremarkable.

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

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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.

ULTRASONOGRAPHIC FINDINGS

- Minor stage B-1 valvular disease
- Left adrenal caudal pole mass- adenoma, myelolipoma, carcinoma, pheochromocytoma, all possible.
- Heterogenous, irregular, and expansive right adrenal nodule
- Left liver nodule- appeared to be subjectively benign, however, should be monitored. Other subtle micronodular changes were noted in the liver as well.
- Moderate degenerative renal changes

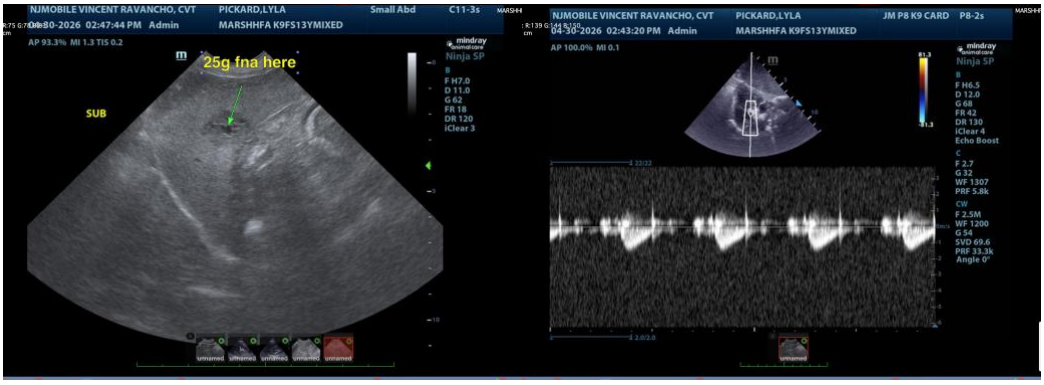
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Primary respiratory protocol is recommended based on radiograph findings.

The heart is stable without clinical disease. No overt contraindication for anesthesia of brief to moderate duration. I suggest Torbutrol premed, Propofol induction, Isoflo maintenance or similar protocol if anesthesia is desired. Blood pressure recommended if not already performed and target white coat negative systolic pressure of < 160 mmHg. If higher than this ACE-inhibitor is suggested to reach this level. Recheck echocardiogram is recommended in 6 months, earlier if murmur grade increases or clinical signs initiate.

Ultrasound guided 25-gauge FNA of the general liver and liver nodule could be considered, however subjectively they appear benign, and I'm more concerned about the adrenal presentations.
Serial blood pressure measurements are recommended in this patient. If hypertension is an issue metanephrine level is recommended. If the patient appears Cushingoid and urine specific gravity is less than 1.020 then work-up for adrenal dependent Cushing's is indicated. Recheck is recommended in 2-3 weeks to assess for any progression of the adrenal gland.

Recheck sonogram in 1 month regarding the adrenals and liver.



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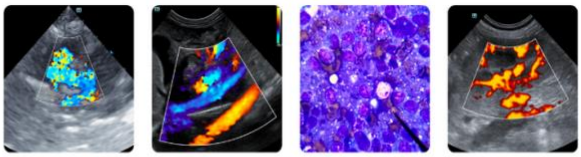

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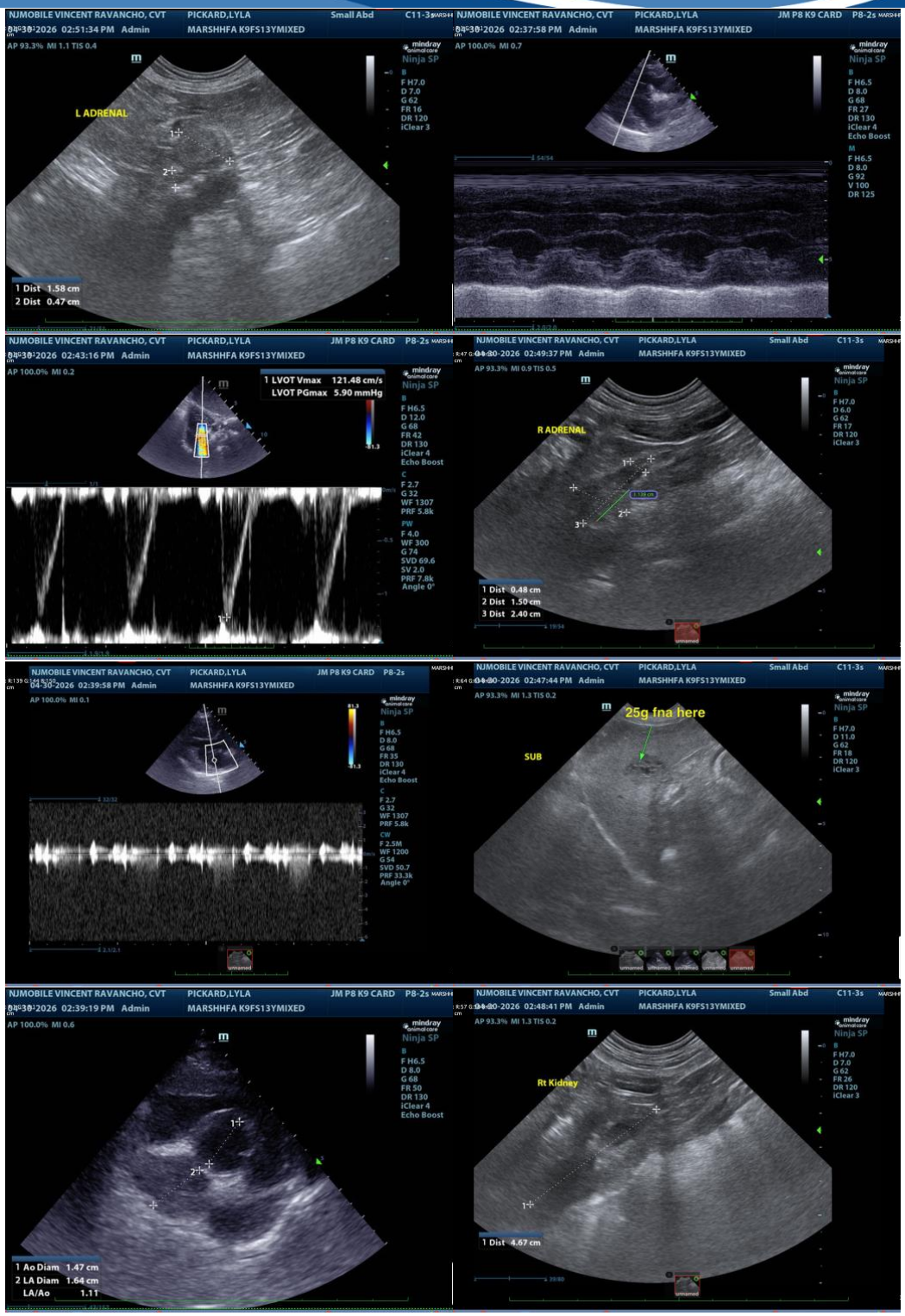

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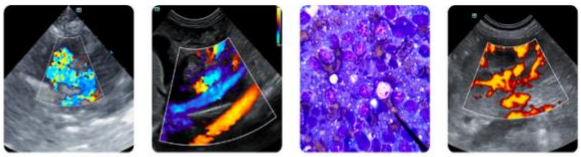

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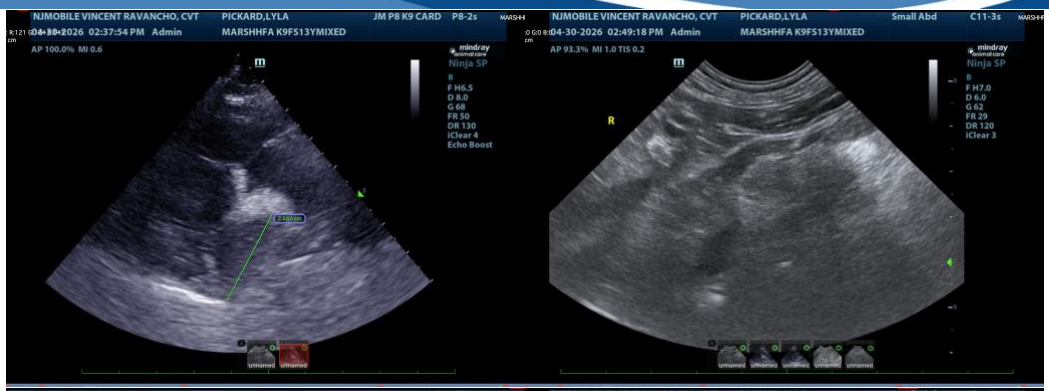

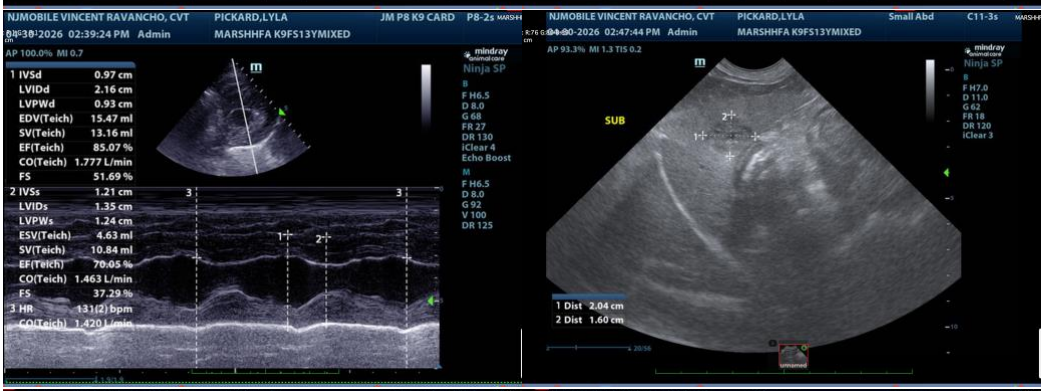

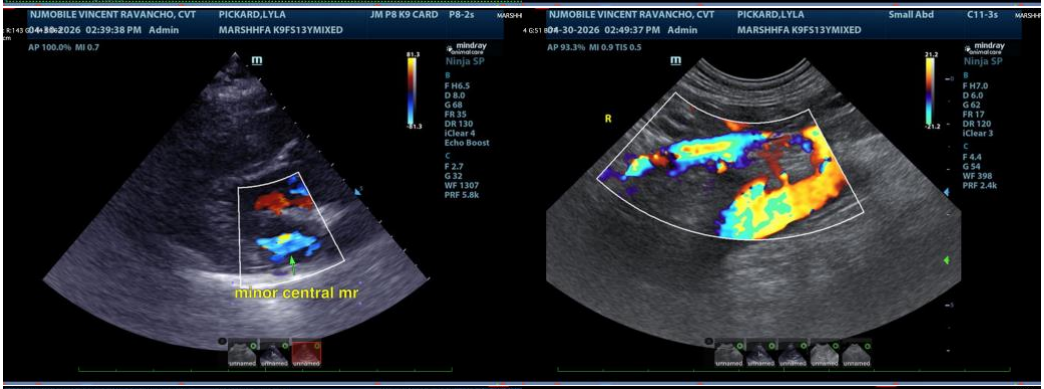

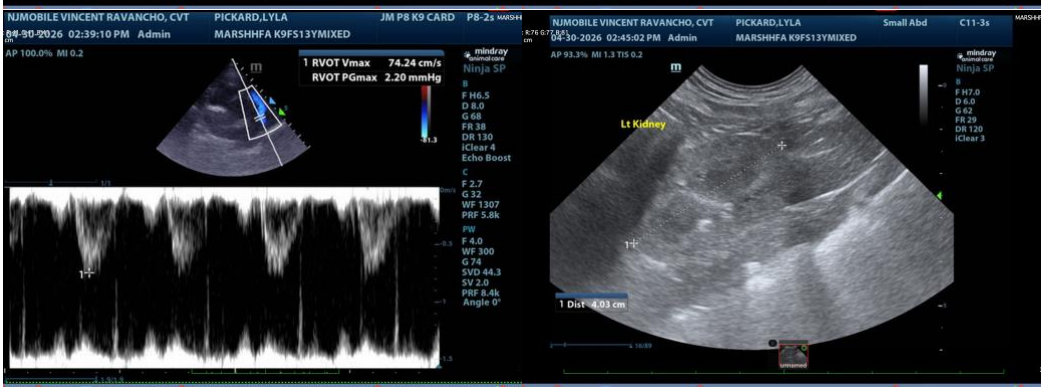

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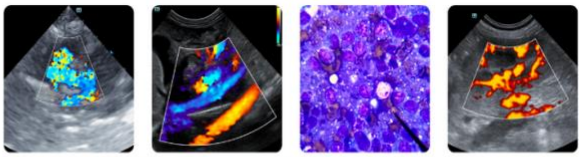

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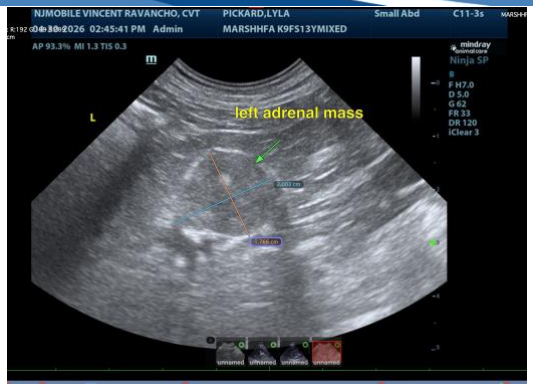

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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(CFM), Cert. IVUSS,
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