



**PATIENT**

Mischka Munro

**SPECIES**

Canine

**BREED**

Dachshund

**SEX**

Spayed Female

**AGE**

14 Years

**WEIGHT**

14.4 Pounds

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Shari Reffi, CVT

**HOSPITAL NAME**

Newton VH

**REFERRING VET**

Dr. Chan

**INVOICE**

35469

**DATE**

11/10/25

**PRESENTING CLINICAL SIGNS**

History: Heart murmur, severe azotemia, hx Cushings. QAR, BCS 4/9. Receiving Unasyn and Baytril. Abnormal PE/Chem/CBC/UA Results: Creat 7; BUN 140; P 14.6; TBili 1.9 & 1.3. UA 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	5.83	--	NM	1.4	--	--	NM
CANINE CARDIAC PARAMETERS	HR (BPM)	AV VMAX (m/s)	PV MAX (m/s)	BODY WEIGHT (kg)	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	80	1.17	.77	--	3.2	--	--

**Cardiac Presentation**

The **left atrium** measured the upper limits of normal in size. Chamber volumes and echogenicity were normal. The cranial and caudal **mitral** valve leaflets presented vegetative thickening consistent with endocardiosis. Doppler indicated measurable insufficiency. 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 or chamber overload. **Tricuspid** valvular assessment demonstrated adequate linear morphology. The **right ventricle** was of normal size (1/3 diameter of LV), chordae structure, myocardial echogenicity and thickness. **Pulmonic** 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. No echographically detectable evidence of infiltrative disease was visible. The cranial **mediastinum and pericardial 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 was 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 mild 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 left kidney measured 4.56 cm. The right kidney measured 4.56 cm. Blood flow to the kidneys was adequate on power doppler assessment.

**Adrenal Glands**

The **adrenal glands** appeared slightly enlarged and swollen. No evidence of focal capsular expansion or invasion into the phrenic veins were noted. No overt suspicion of neoplasia was noted. This is considered likely a hyperplastic change associated with stress or adrenal endocrinopathy (PDH). If isosthenuria is persistently present and the patient morphologically suggests Cushing's disease, then ACTH testing would be indicated. This is a moderate change. The right adrenal gland measured 2.13 cm x 1.06 cm at the caudal pole and 0.82 cm at the cranial pole. The left adrenal gland measured 2.45 cm x 1.02 cm at the caudal pole and 0.9 cm at the cranial pole.

**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 tracts were of normal volume, and no evidence of congestion was noted. Regional inflammation was noted around the portal hilus. Increased portal markings were noted. The **gallbladder** was overdistended with fixed biliary striations without mobility. The common bile duct measured 0.3 cm, which is not overdistended, however, some echogenic bile, consistent with mucoduct was noted.

**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**



**PATIENT**

**Pancreatic** remodeling was noted.

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**ULTRASONOGRAPHIC FINDINGS**

**SPECIES**

- Gallbladder mucocele with mucoduct
- Regional inflammation
- Concurrent pancreatic remodeling
- Age-related renal and hepatic changes
- Bilateral adrenal hypertrophy, consistent with PDH
- Stage B-1 valvular disease
- Upper limits of normal left atrial size

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

It is debatable on whether the mucocele is the overt cause in this patient. This would not be responsible for the azotemia. Acute renal insult, such as leptospirosis, should be considered. Eventual cholecystectomy is likely in this patient's best interest, especially if the bilirubin is persistently elevated. No specific cardiac medications are recommended at this time. Judicious IV fluids to avoid volume overload, IV ampicillin, gallbladder motility study (after stabilization of the patient), management for acute renal failure, and assessment for toxin exposure to leptospirosis are all indicated.

The heart is stable without clinical disease. No overt contraindication for anesthesia of brief to moderate duration. I suggest Torbutrol premed, Propofol induction, Isoflor 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.

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For an additional charge, internal medicine consult can be utilized through Sonopath.com. You can select the internal medicine drop down at <http://spa.sonopath.com/>.

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One of the world's top internists & SonoPath associate Dr. Remo Lobetti BVSc, MMedVet, PhD, DECVIM can evaluate your case through SonoPath. <https://sonopath.com/resources/sonopath-services/internal-medicine-teleconsultation-services>

**REFERRING VET**

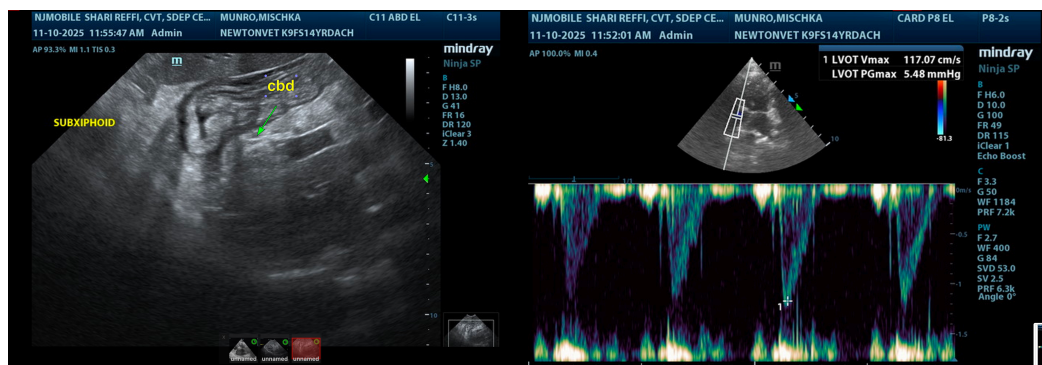
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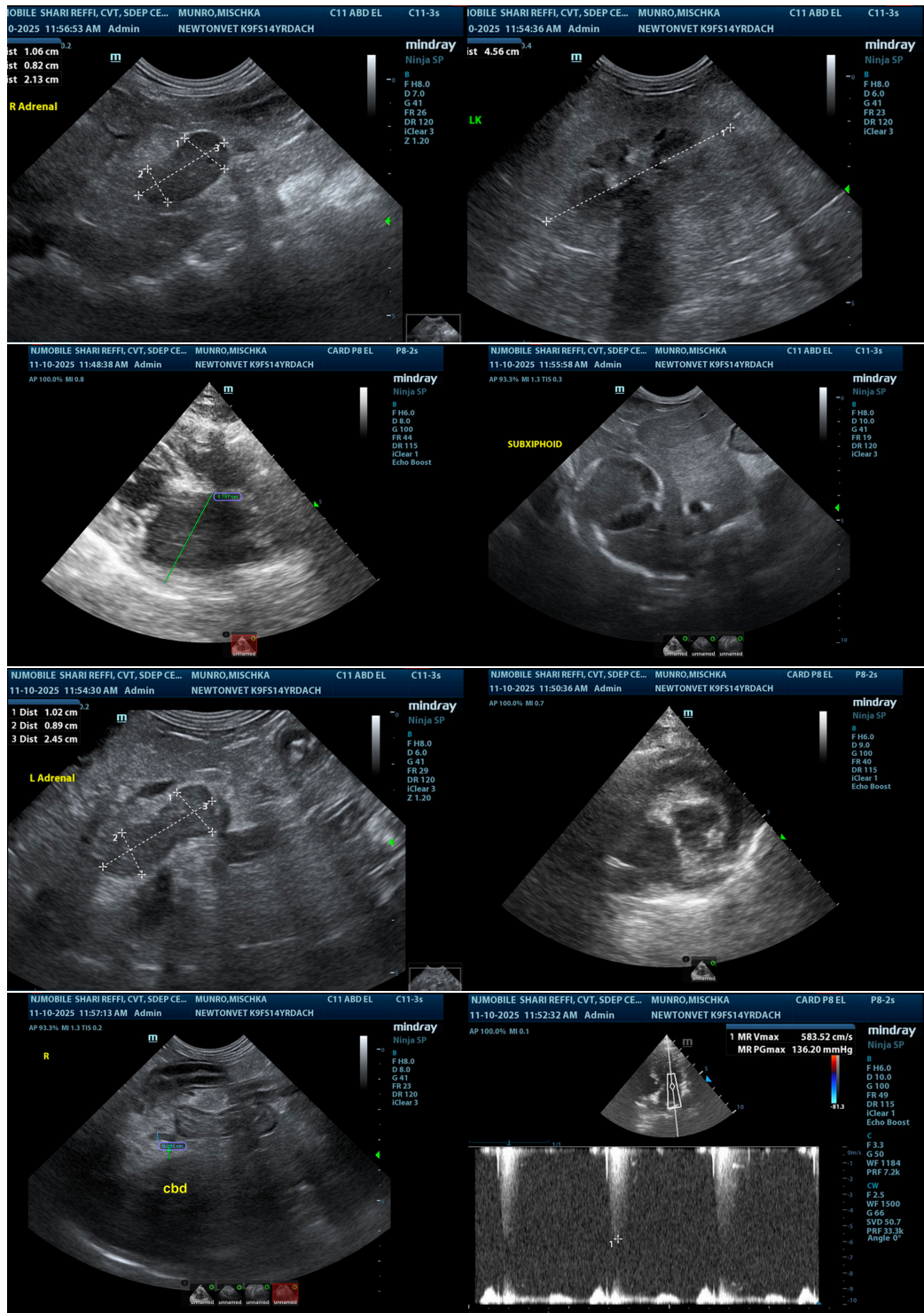
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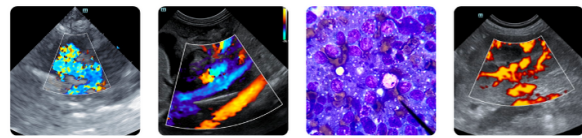
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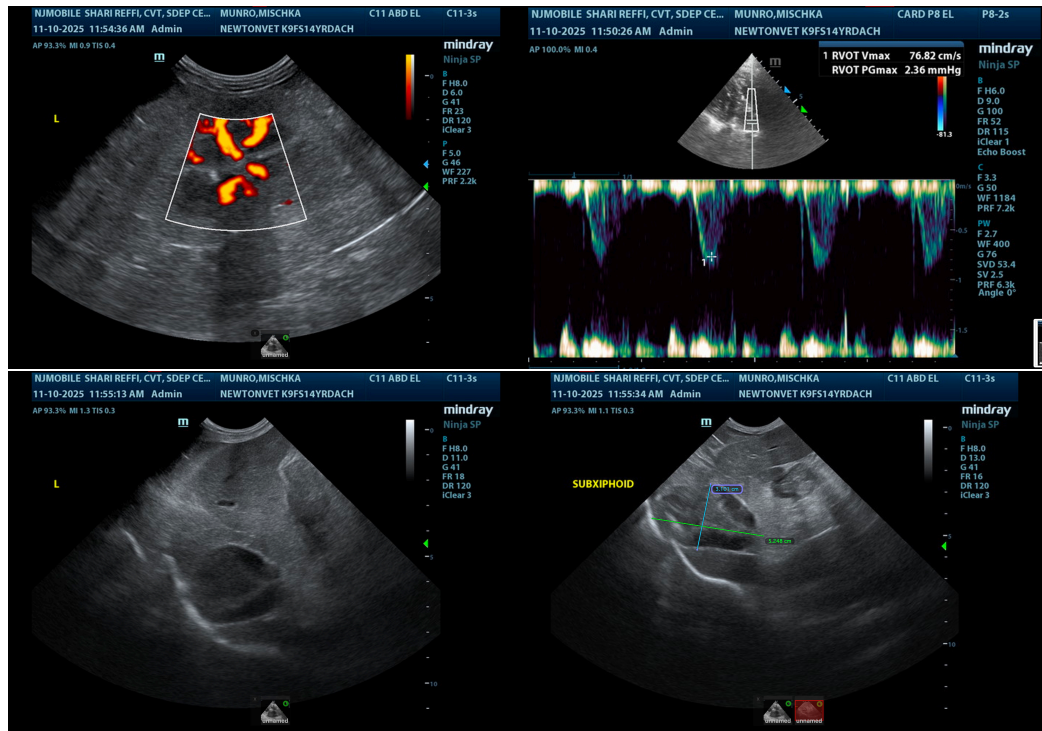
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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