

PATIENT PRESENTING CLINICAL SIGNS

Max Sudnik History: Concern for neoplasia. Lethargic, enlarged liver.

SPECIES Abnormal PE/Chem/CBC/UA Results: SDMA 23, Crea 4.4, ALT 640, ALP>2000, WBC 34.05, Neu 29.31, Mono 3.22, RBC 9.4

Canine

BREED ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

Yorkie Mix

SEX

Male Neutered

AGE

16y

WEIGHT

19.7 lbs

| 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 | -- | -- | -- | 1.1 | 35 | 68 | 0.2 |
| 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 | NM | 1.0 | 0.7 | -- | 2.5 | 2.0 | -- |

INTERPRETED BY

R. McKenzie Daniel, DVM, DABVP (Canine and Feline)

IMAGING PERFORMED BY

Shari Reffi, CVT

HOSPITAL NAME

Smithfield AH

REFERRING VET

Dr. Boe

INVOICE

13032

DATE

1/8/26

Cardiac Presentation

The echocardiogram in this patient demonstrated normal **left atrial** size and structure. Chamber volume and blood echogenicity were normal. The cranial and caudal **mitral** valve leaflets presented mild thickening consistent with endocardiosis. No evidence of valvular prolapse or overt significant MR noted on doppler. The **left ventricle** presented increased free wall and septal thickness with a-linear contour. The **myocardium** presented some echogenic remodeling consistent with expected age-related change. **Contractility** of the ventricular walls was adequate and in normal range for this breed and patient size. The **left ventricular outflow** tract demonstrated laminar flow with normal structure. Aortic valve insufficiency noted on doppler measuring 3.7 m/s. Normal measured LVOT velocity noted. Subjective assessment of the **right atrium** and auricle revealed normal size, structure and content. No evidence of masses was noted. **Tricuspid** valvular assessment demonstrated expected findings for this age patient. no overt TR noted on doppler. The **right ventricle** was of normal size (1/3 diameter of LV), echogenicity and thickness. **Pulmonic** tract assessment revealed normal valve structure, laminar flow, and diameter (approx.1:1 pa/ao ratio). Normal measured RVOT velocity noted. No visible **pericardial** or free pleural fluid was noted. The **mediastinum** was free of masses in the visible window.



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Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra exhibited normal thickness and tone. Anechoic urine was present in the lumen with no uroliths or sediment. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes were noted.

The residual prostate was non-enlarged in size exhibiting mild, non-homogeneous, focally hyperechoic parenchyma. Residual prostate measured 1.0 cm in diameter.

The area of the aortic trifurcation was free of pathology.

Normal size and margination was present in the kidneys. A normal 1:3 cortex / medulla ratio was maintained. The medulla and cortices were uniform in texture with some increased echogenicity and moderate loss of corticomedullary symmetry and definition expected for the age of the patient. The right kidney exhibited minor pyelectasia and mild retroperitonitis. The right kidney measured 5.7 cm in length. The left kidney measured 5.0 cm in length.

Adrenal Glands

The left adrenal gland was asymmetrically enlarged in size with non-homogeneous nodular, potentially cystic parenchyma measuring 3.9 cm length x 1.7 cm width in the cranial pole and 1.4 cm width at the caudal pole. The right adrenal gland was asymmetrically enlarged in size with non-homogeneous, non-mineralized parenchyma measuring 3.6 cm x 3.1 cm.

Spleen

The spleen exhibited a finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. The capsule was smooth and regular without apparent expansion. The splenic vasculature at the hilus was normal in volume with no evidence of congestion or thrombosis. Acute to chronic inflammatory, neoplastic, or benign parenchyma changes were not noted. Intermittent, small, non-disruptive, hyperechoic nodules were present consistent with myelolipomas.

Liver

The liver presented moderate to markedly enlarged in size. The parenchyma of the liver was homogeneous in echogenicity compared to the spleen and renal cortices. The liver parenchyma was uniform with a mildly coarse echotexture. The capsule of the liver was symmetrically rounded to mildly swollen in margination. The hepatic and portal vasculature were normal in appearance without signs of congestion. Solitary visualized, non-capsule deforming, non-homogeneous ventral caudal left liver nodule was present measuring 1.2 cm in diameter. The gallbladder was non distended in size with mild to moderate, non-organized, echogenic, nonmineralized biliary sludge. The cystic duct and common bile ducts were normal without evidence of dilation.

Gastrointestinal

The stomach mildly thickened exhibiting intact wall layering. The lumen of the stomach was empty with no signs of ileus, obstruction or foreign material.

The small intestine presented intact wall layering with maintained 1:3 muscularis/mucosa ratio. The lumen of the small intestine was empty with minor duodenal corrugation.

Normal visible colon wall layers were present with apparent semi-formed feces in lumen.



PATIENT

Pancreas

Max Sudnik

The left limb, right limb, and base of the pancreas presented hypoechoic to heterogeneous echogenicity compared to adjacent omental fat. Mild asymmetrical capsule margination was present with mild variable parenchymal swelling and mild peripancreatic reactivity / inflammation. No overt evidence of neoplasia.

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Free Abdomen

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Generalized mild omental hyperechogenicity present.

SEX

- Thickened remodeled LV with adequate LV function – pseudo hypertrophy/dehydration, systemic hypertension, infiltrative disease such as lymphoma may present in this manner
- Normal LA
- Normal RA/RV – no overt pulmonary hypertension
- Right adrenal mass with concurrent non-homogeneous, irregular, possibly cystic left adrenomegaly
- Non-congested significant hepatomegaly with intraparenchymal nodule
- Gallbladder debris (non-mucocele)
- Pancreatitis and subjective gastroduodenitis
- Right retroperitonitis to potential generalized mild peritonitis

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ULTRASONOGRAPHIC FINDINGS

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

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(Canine and Feline)

The right adrenal mass is almost certainly consistent with neoplastic criteria and suggestive of potential pheochromocytoma given possible hypertension coinciding with LV hypertrophy and potential for bilateral adrenal tumors. Secondary associated hepatopathy with hepatic nodular hyperplasia, lipogranuloma or metastasis possible. Vascular invasion associated with the adrenal pathology cannot be excluded. Serial monitoring of systemic BP for hypertension and +/- urine metanephrine level could be considered unfavorable. Unfavorable prognosis unfortunately indicated.

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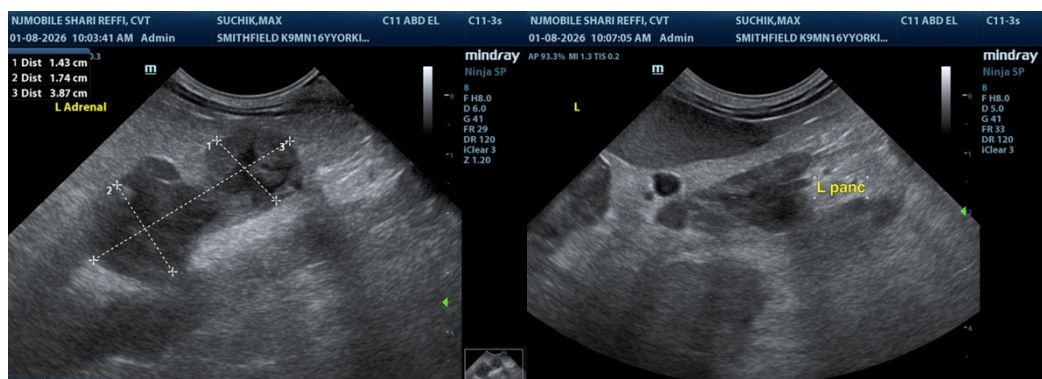
Dr. Boe

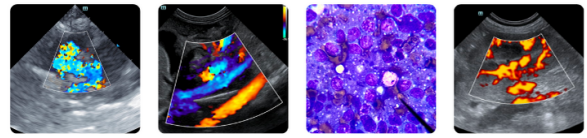
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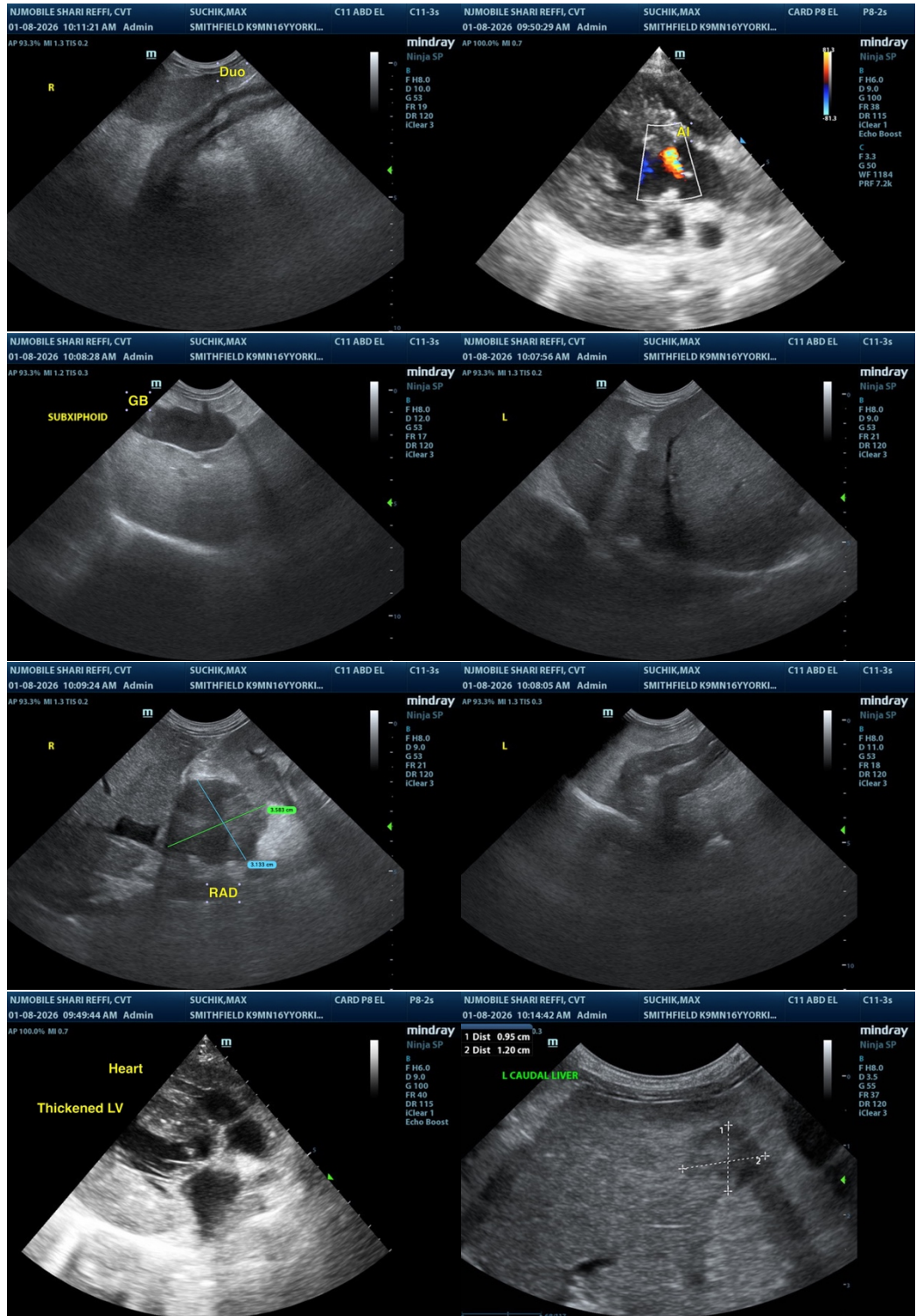
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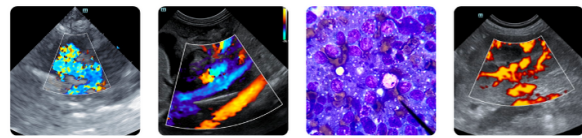
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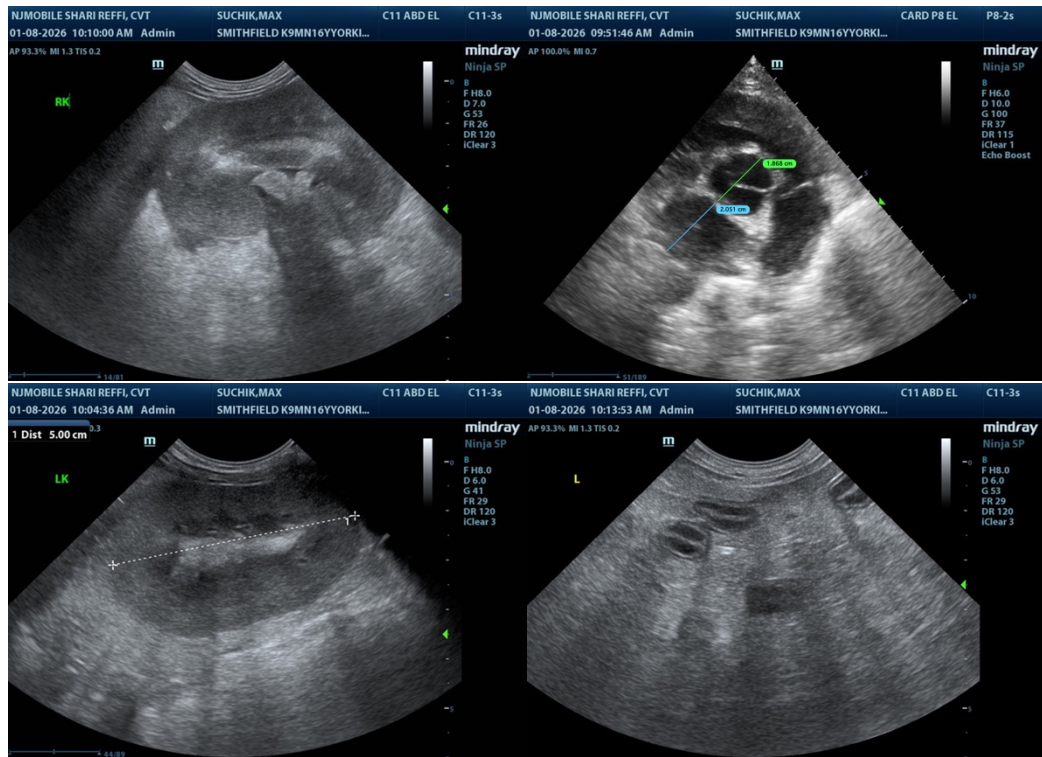
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

R. McKenzie Daniel, DVM, DABVP (Canine / Feline Practice)

info@sonopath.com