



**PATIENT**

Sam Werbel

**SPECIES**

Feline

**BREED**

DSH

**SEX**

Neutered Male

**AGE**

9 Years

**WEIGHT**

10 Pounds

**INTERPRETED BY**

Eric Lindquist, DMV

DABVP, Cert. IVUSS

**IMAGING PERFORMED BY**

Shari Reffi, CVT

**HOSPITAL NAME**

Marsh Animal Hospital

**REFERRING VET**

Dr. Milwicki

**INVOICE**

44158

**DATE**

1/12/23

**PRESENTING CLINICAL SIGNS**

2lb weight loss in 3 months, poor appetite, vomiting. Pulmonary nodules and large kidneys noted on rads. Current meds: Fluoxetine

Abnormal PE/Chem/CBC/UA Results: bun 92, Creat 5.5, phos 7.0, rbc 6.55, hgb 9.6, neuts 16104, monos 860, eos 73, glucose 232, sdma 56, Na 145, Cl 111, Alt 11, alp 6, USG 1.016, ph 6.5, Protein 3+, bld 3+,

**ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN**

| FELINE CARDIAC PARAMETERS  | BODY WEIGHT (kg) | HR (BPM)                  | IVSd (cm)  | LVIDd (cm)      | LVWd (cm)       | FS (%)    | EF (%) |
|--|------------------|---------------------------|--|-----------------|-----------------|-----------|--------|
| NORMAL PARAMETER   | -----            | 150-240                   | 0.3-0.6  | 1.0-2.1         | 0.25-0.6        | 35-67     | 80-100 |
| PATIENT  |                  | 218                       | 0.43   | 1.04            | 0.42            | 57        | 91     |
| FELINE CARDIAC PARAMETERS  | LA/AO (Boon)     | LA/AO HEART BASE (Sisson) | LA 2D 4-chamber long axis AS to FW (Sisson) (cm) | LVOT VEL. (m/s) | RVOT VEL. (m/s) | IVRT (m/) |        |
| NORMAL PARAMETER   | <1.5             | 0.88-1.79                 | 0.7-1.7  | <1.6            | <1.3            | 40-60     |        |
| PATIENT  | 1.0              | 1.0                       |  | 1.0             | 0.9             | NM        |        |
| Adapted from June Boon, Veterinary Echocardiography, 1998<br>Sisson D et al. JVIM 1991; 5: 232, Jacobs et al. Am J Vet Res 1985; 46:1705 |                  |                           |  |                 |                 |           |        |

**Cardiac Presentation**

The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 separate LA measurements. The cranial and caudal **mitral** valve leaflets presented normal linear structure and kinetics. 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 and angles 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 and kinetics. 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).

Pleural effusion and lung consolidations noted. The lung and pleural pathology is non-cardiogenic. The heart is normal to even volume contracted.

**Urinary System**

The **urinary bladder** revealed an apical polyp measuring approximately 1.5 cm x 0.50 cm. The remainder of the bladder, cystourethral junction, and ureteral papillae were unremarkable. The pelvic urethra was imaged 3.0 cm beyond the cystourethral junction.



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The **kidneys** revealed ill-defined hypoechoic medullary rim halo with subcapsular halo on the left kidney and generalized enlargement. Loss of corticomedullary definition noted. The left kidney measured 4.8 cm. The right kidney measured 3.44 cm.

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**Adrenal Glands**

The regions of the **adrenal glands** were unremarkable.

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**Spleen**

The **spleen** in this patient was uniform, yet volume contracted. Hydration status should be assessed.

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**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 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**

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.

**INTERPRETED BY**

Eric Lindquist, DMV

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**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.

**IMAGING PERFORMED BY**

Shari Reffi, CVT

**Free Abdomen**

Slight free fluid noted adjacent to the left kidney with minor regional inflammation.

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**ULTRASONOGRAPHIC FINDINGS**

**REFERRING VET**

Dr. Milwicki

- Normal echocardiogram
- Non-cardiogenic pleural effusion and lung consolidations
- Bilateral renal lymphoma pattern
- Minor apical dorsal bladder polyp – appears quiescent.

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

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FNA of the left kidney recommended, as well as pleurocentesis and cytospin. Immediate chemotherapeutic intervention likely necessary. Strong concern for renal lymphoma. FIP is a remote potential.

*Radiographs: Caudal lung nodule, renomegaly, cranial abdominal mass.*



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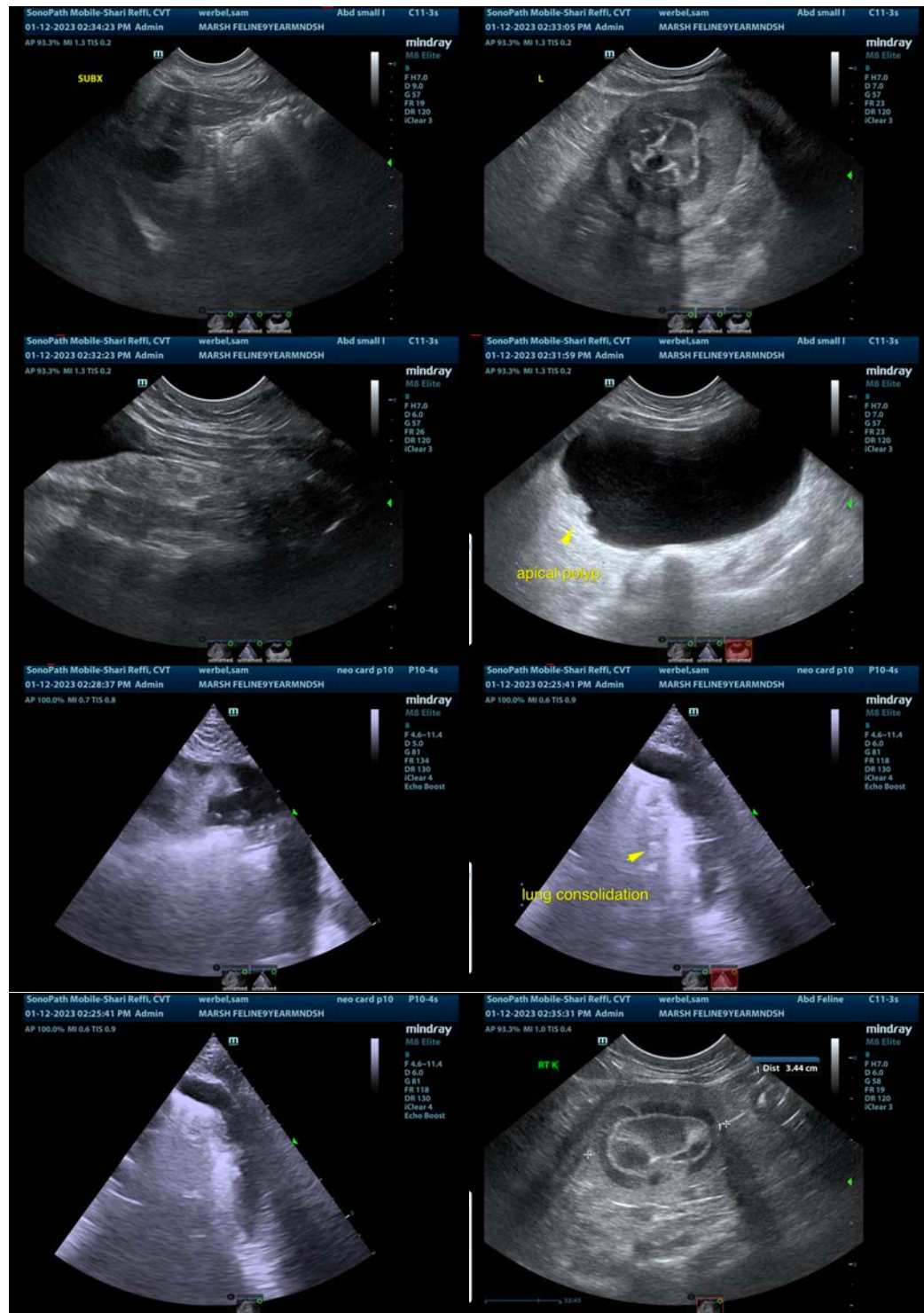
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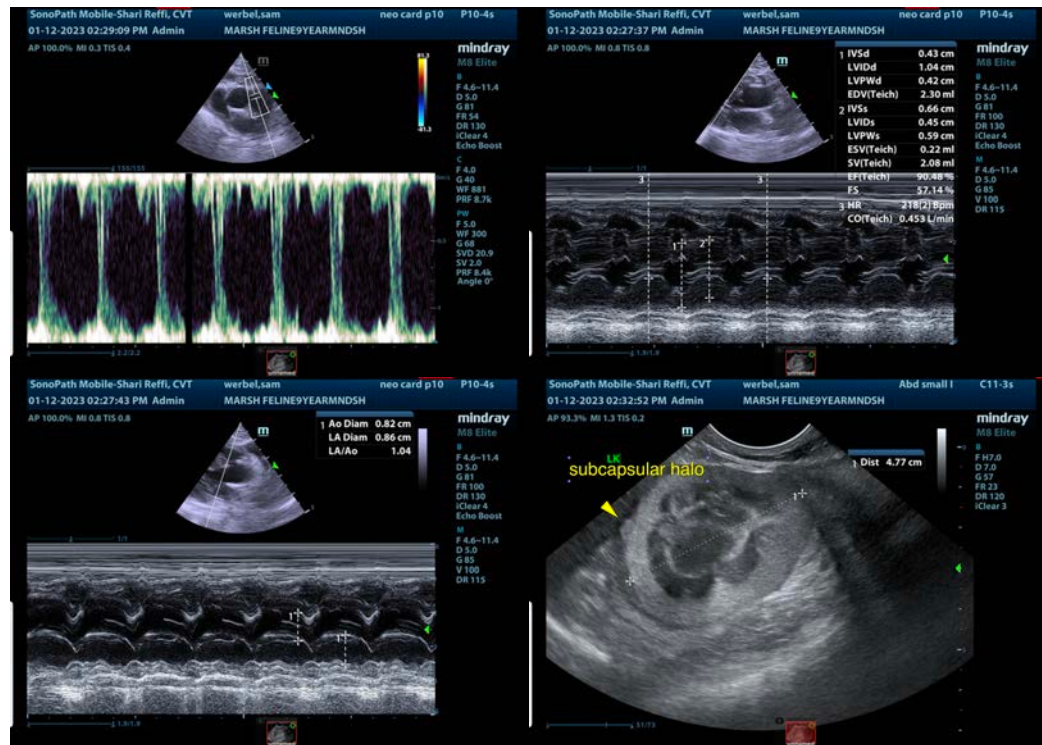
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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

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