



**PATIENT**

Skottie Maldonado  
Alancastro

**SPECIES**

Canine

**BREED**

Scottish Terrier

**SEX**

Intact male

**AGE**

10 years

**WEIGHT**

13.5 lbs

**INTERPRETED BY**

Eric Lindquist, DMV  
DABVP, Cert. IVUS

**IMAGING PERFORMED BY**

Dr. Ferrer

**HOSPITAL NAME**

Paseos VC

**REFERRING VET**

Dr. Davila

**INVOICE**

32084

**DATE**

7/29/22

**PRESENTING CLINICAL SIGNS**

History: Presented as a referral for an abdominal ultrasound and echocardiogram. Pt presented to rDVM for general examination and with a complaint of severe weight loss, but eating well and no Vomiting and diarrhea. During exam noticed a heart murmur and also on radiographs noticed an enlarged heart and enlarged prostate. Pt is currently on Vemedin 2.5mg: 1 tablet in the AM and 1.2 tab PM

Abnormal PE/Chem/CBC/UA Results: PE: Grade 4/6 systolic HM Radiographs: Enlarged heart silhouette, enlarged prostate. BW: unremarkable. just mild elevated ALP 257 ( 23-212) and globulin 4.7 ( 2.5-4.5).

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**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 **prostate** was uniformly enlarged with lobar swelling appeared to impinge upon the urethra and mildly deviate the descending colon. The prostatic tissue was hyperechoic containing focal areas of decreased echogenicity. These changes are suggestive of either chronic inflammatory episodes, benign cystic pathology or both. Underlying neoplasia cannot be completely ruled-out but is lower on the differential list. This presentation is most consistent with benign prostatic hyperplasia with possible active prostatitis. Neutering or off-label Finasteride (Propecia) (0.1-0.5 mg/kg Sid) treatment is indicated +/- FNA or prostatic wash cytology and culture.

The **kidneys** revealed normal size and structure, corticomedullary definition and ratio for this age. The cortices presented largely uniform texture with normal echogenic relationship to liver and spleen. Medullary structure differed distinctly from the cortex. The capsules were acceptably uniform without significant irregularities. Slight pyelectasia was noted. The right kidney measured 5.7 cm. The left kidney measured 5.72 cm.

**Adrenal Glands**

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 0.42 cm. The right adrenal gland measured 0.43 cm ta the caudal pole and 0.6 cm at t the cranial pole.

**Spleen**

The **spleen** in this patient was mildly enlarged with uniform parenchyma and was folded upon itself caudally. This is a positional variant and is not pathological. There was no evidence of significant disease.



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**Liver**

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Exam of the cranial abdomen demonstrated excessive **liver** size, swollen contour, with conserved uniform architecture. Parenchymal echogenicity was diffusely isoechoic to the spleen and falciform fat. The gallbladder was mildly over distended with suspended and dependent debris, yet not to the level of emerging mucocele, yet sludge appears to be mildly excessive. No adjunctive inflammation was noted.

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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.

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**Pancreas**

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The base and limbs of the **pancreas** were observed to be largely isoechoic to surrounding omental fat. Some parenchymal remodeling, however, with mild deviation from curvilinear normalcy was observed. Pancreatic duct and capsular irregularities were present consistent with age related changes. If pain upon imaging (+ Murphy sign) was present or if the patient is focally painful in subxiphoid palpation then low-grade smoldering chronic pancreatitis should be suspected.

**WEIGHT**

13.5 lbs

**ULTRASONOGRAPHIC EXAMINATION OF THE HEART**

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The echocardiogram in this patient demonstrated enlarged **left atrial** size based on 3 different LA measurement methods. 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 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.

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CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
PATIENT	5.0	2.3	> 2.0	2.3	39	70	0.2
CANINE CARDIAC PARAMETERS	HR (BPM)	AV VMAX (m/s)	PV MAX (m/s)	BODY WEIGHT (kg)	LA (2D short axis Base view) (cm)	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	BELOW	BELOW	BELOW	BELOW
PATIENT	180		1.08	13.5 lbs		4.8	

**ULTRASONOGRAPHIC FINDINGS**

Benign hepatopathy.

Minor excessive gallbladder debris.

BPH prostate.

Advanced stage B2 + valvular disease to C1 with mitral prolapse and tachycardia.

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Ursodiol therapy is recommended long term. If any lower urinary tract signs are present neutering would be indicated. There was no evidence of significant abdominal pathology. Antibiotic therapy is warranted for 6 weeks.

If any pulmonary edema is present then severe prolapse of the anterior mitral valve leaflet was noted. I recommend triple therapy in this patient. I am concerned given the tachycardia and severe volume overload this patient is essential in congestive heart failure. Continuation of Vetmedin adding Spironolactone at 1-2 mg/kg b.i.d. and ace inhibitor at 0.5 mg/kg s.i.d. progressing to b.i.d. and Lasix at 1-2 mg/kg b.i.d. Recheck echocardiogram is recommended in 7-10 days. Blood pressure measurements, BUN and creatinine should all be monitored. Sleeping respiratory rate should also be monitored with a target less than 25/minute. The weight loss is likely cardiac related.



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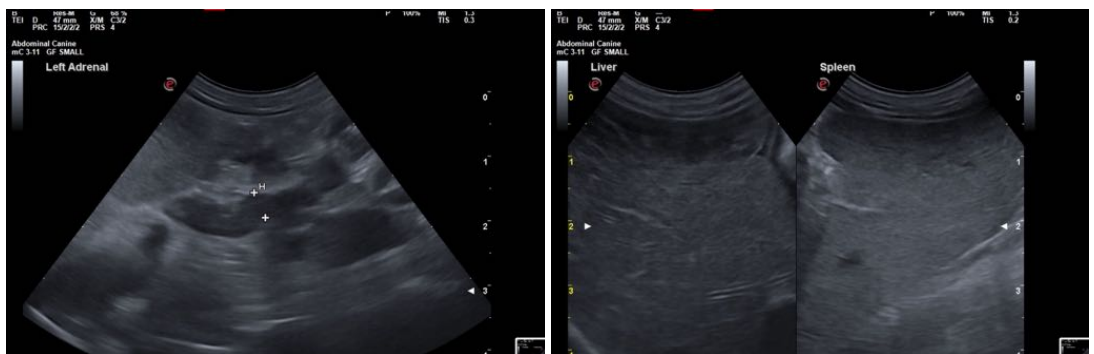
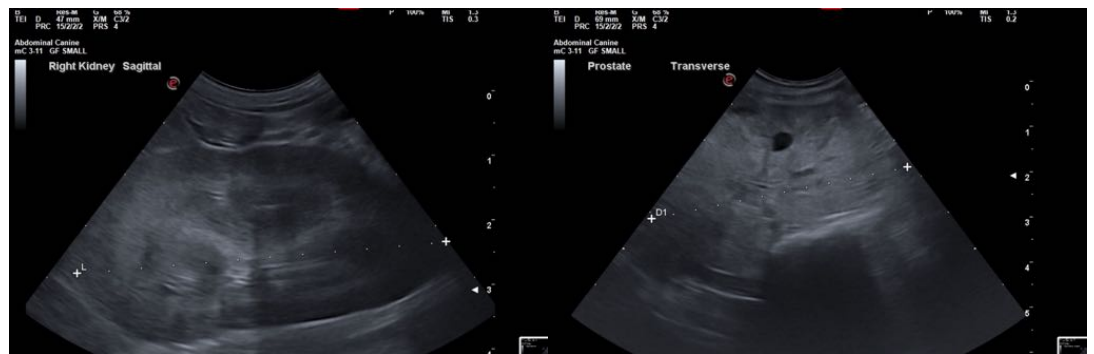
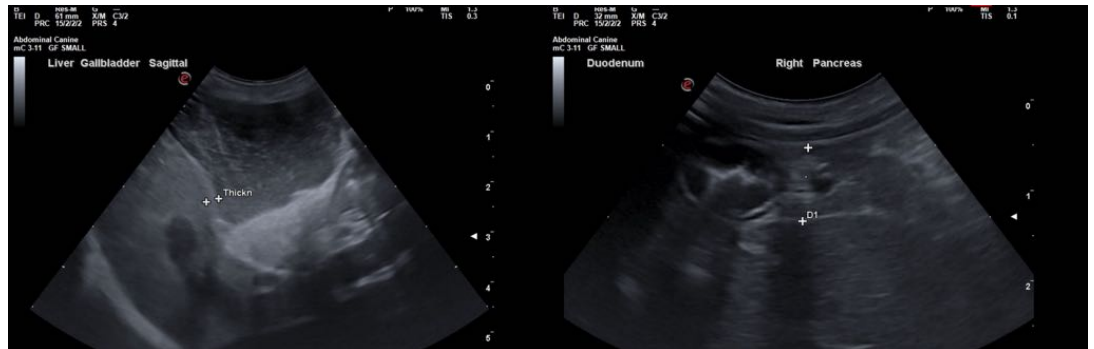
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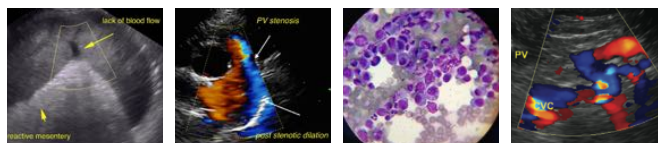
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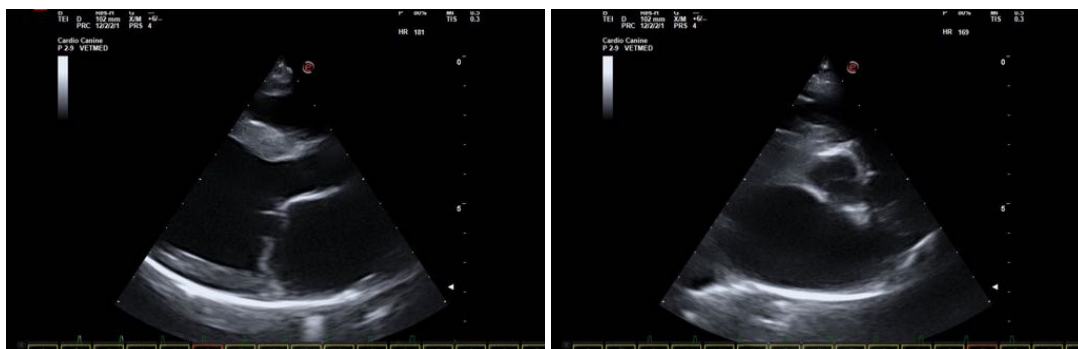
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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, Cert. IVUSS, CEO of SonoPath.com  
info@SonoPath.com