

**PATIENT PRESENTING CLINICAL SIGNS**

**PATIENT** Leo Spanish  
**SPECIES** Canine  
**BREED** Husky Mix  
**SEX** MN  
**AGE** 9yr

04/24 Presented for enlarging left body wall mass, lameness, watery diarrhea, inappetence, PU/PD, panting, weight loss. Onset followed acute owner stress + 3-day boarding with other dogs. dx Diabetes Mellitus (BG 518 mg/dL, BHBA 0.6). U/S of mass: subfascial, non-invasive, suspected lipoma vs. STS, deemed non-resectable. Started Caninsulin 8 U SC q12h, Metacam, FortiFlora.  
 04/25 Fecal antigen negative. Inconsistent appetite ? missed/halved insulin doses.  
 -04/27 Thoracic + abdominal rads- marked hepatomegaly with caudal organ displacement, no obstruction, no pulmonary infiltrates or metastatic disease, mass confined to subcutis. UA: no ketones, no UTI, well-concentrated. Started metronidazole.  
**\*\*Current meds:\*\*** Caninsulin 12 U SC q12h · Doxycycline 300 mg PO q12h · Cerenia 160 mg PO q24h · Mirtazapine 15 mg PO q24h · Metacam (36 kg dose) PO q24h, Butorphanol for US, 600 mg Gabapentin and 300 mg Trazodone for oral sedation for US  
 Abnormal PE/Chem/CBC/UA Results: Rads attached Continuation of Hx- 05/05 Exam. Wt 56.9 kg, T 39.4. New dry cough post-drinking, mucoid brown/purulent nasal discharge L>R, upper airway gurgling. BG unchanged. Brief TFAST negative for free pleural fluid (limited by patient size). Insulin increased to 12 U SC q12h, started doxycycline, Cerenia, mirtazapine. Primary Question to Be Answered in This Exam **\*\*Reason for referral.\*\*** Two-cavity (abdominal + thoracic) ultrasound. Poorly regulated DM with marked hepatomegaly, chronic GI signs, new URI signs, and a large lateral body wall mass.

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN AND HEART**

**WEIGHT**

55kg

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Amanda Stewart

**HOSPITAL NAME**

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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	--	--	--	1.26	40	74	0.3
CANINE CARDIAC PARAMETERS	HR (BPM)	AV VMAX (m/s)	PV MAX (m/s)	BODY WEIGHT	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	127	1.5	1.2	55kg	4.0	3.8	--

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**DATE**

05/12/2026

**Cardiac Presentation**

The echocardiogram in this patient demonstrated normal left atrial size based on 2 separate methods of LA evaluation. The cranial and caudal mitral valve leaflets presented normal linear structure, extension in systole, and union in diastole with normal kinesis. No overt MR on Doppler. 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** 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. Normal measured LVOT velocity. 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. No overt TR on Doppler. 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). Normal measured RVOT velocity. No visible pericardial or free pleural fluid was noted. The cranial mediastinum and pericardial and extra-cardiac regions were free of pericardial masses or overt pleural/ pulmonary pathology in the visible window with aerated lung exhibiting dry lung criteria.

**SPECIES** Canine

**BREED** Husky Mix

**Urinary System**

**SEX** The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2 cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with no evidence of urine/lumen sediment, mineral, or calculi. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes was noted.

**AGE** 9yr

Normal size and margination were 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 loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation was present. The left kidney measured 8.2 cm in length. The right kidney measured 8.4 cm in length.

**WEIGHT**

55kg The area of the aortic trifurcation was free of pathology.

The area of the residual prostate appeared normal and free of pathology

**INTERPRETED BY**

**Adrenal Glands**

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

The bilateral adrenal glands were indistinctly visualized owing to patient size and conformation. Subjective mild bilateral adrenomegaly. Mild parenchyma heterogeneity and mild capsule asymmetry was present without suspicion for overt neoplasia. The left adrenal gland subjectively measured 0.93 cm width in the caudal pole. The right adrenal gland measured 1.1 cm width in the caudal pole.

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**Spleen**

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The spleen exhibited subjective normal size, position, and shape exhibiting homogenous parenchyma.

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**Liver/Gallbladder**

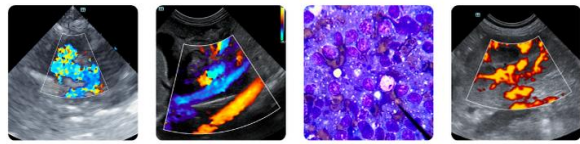
The liver presented moderate to marked increased in size. The parenchyma of the liver was subjectively increased in echogenicity compared to the spleen and renal cortices. The echotexture of the liver parenchyma was uniform with a mild coarse echotexture. The capsule of the liver was symmetrical and rounded in margination. Indistinctly visualized yet suspect non-disruptive, mild non-homogenous ventrocaudal intraparenchymal nodular lesion measuring 4.2 cm diameter was present. Concurrent mid-ventral liver small intraparenchymal hypoechoic nodule vs cyst measuring 1.5 cm in diameter. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was non-distended in size with primarily anechoic luminal content. The cystic and common bile ducts were normal.

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**PATIENT** *Gastrointestinal*

Leo Spanish The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach was empty with no signs of ileus, obstruction or foreign material.

**SPECIES** The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. The lumen of the small intestine was empty with no signs of mechanical/metabolic ileus, obstruction or foreign material.

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

**BREED** *Pancreas*

Husky Mix The pancreas was normal in size and contour with isoechoic to heterogeneous parenchyma compared to adjacent omentum. No signs of active inflammation or neoplasia.

**SEX** *Free Abdomen*

MN No omental masses, overt lymphadenopathy or peritoneal effusion was present.

**ULTRASONOGRAPHIC FINDINGS**

**AGE** *Primary*

9yr

**WEIGHT**

55kg

- Normal cardiac structure / function.
- Aerated pericardial lung exhibiting dry lung criteria
- Enlarged hyperechoic liver with suspect indistinct non-homogenous ventrocaudal intraparenchymal nodular lesion and separate hypoechoic nodule vs cyst
- Normal gallbladder
- Pancreatic remodeling
- Mild chronic renal changes
- Subjective bilateral mild adrenomegaly
- Normal visible gastrointestinal tract

**INTERPRETED BY**

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(Canine and Feline)

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

**IMAGING PERFORMED BY**

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No evidence of cardiomyopathy or visible pulmonary pathology as an obvious contributing factor to the patient's possible respiratory signs indicating non-cardiogenic respiratory components. Potential for non-visible pulmonary disease obscured by aerated lung not definitively excluded. The liver suggests overall metabolic/ diabetic hepatopathy given patient history which may include vacuolar changes, inflammation, non-obstructive cholestasis, small hepatic cyst, nodular hyperplasia, granuloma or potential emerging ventrocaudal hepatic neoplasia all potentials.

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Further assessment may include assuming normal clotting status, hepatic parenchyma and indistinct ventrocaudal nodular lesion FNA cytology. Adrenal screening could be considered if clinical signs consistent with Cushing's syndrome are present. Pancreatic remodeling owing to patient age, previous inflammation or persistent chronic pancreatitis is possible. A GI panel to include PLI/TLI/Cobalamin/Folate is recommended.

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This is a suggestive checkoff list when faced with an unregulated diabetic patient:

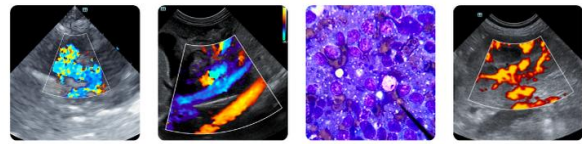
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- UTI
- Dietary indiscretion/intolerance

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- PATIENT**
- Pancreatitis
- Leo Spanish
- Hyperthyroidism/hypothyroidism
  - Exogenous steroids (including topical eye meds)
- SPECIES**
- Canine
- Cushing's
  - Acromegaly
- BREED**
- Husky Mix
- Owner compliance
  - Insulin quality issues
  - Antibodies to insulin
- SEX**
- MN
- Underlying Neoplasia
  - Diffuse liver disease

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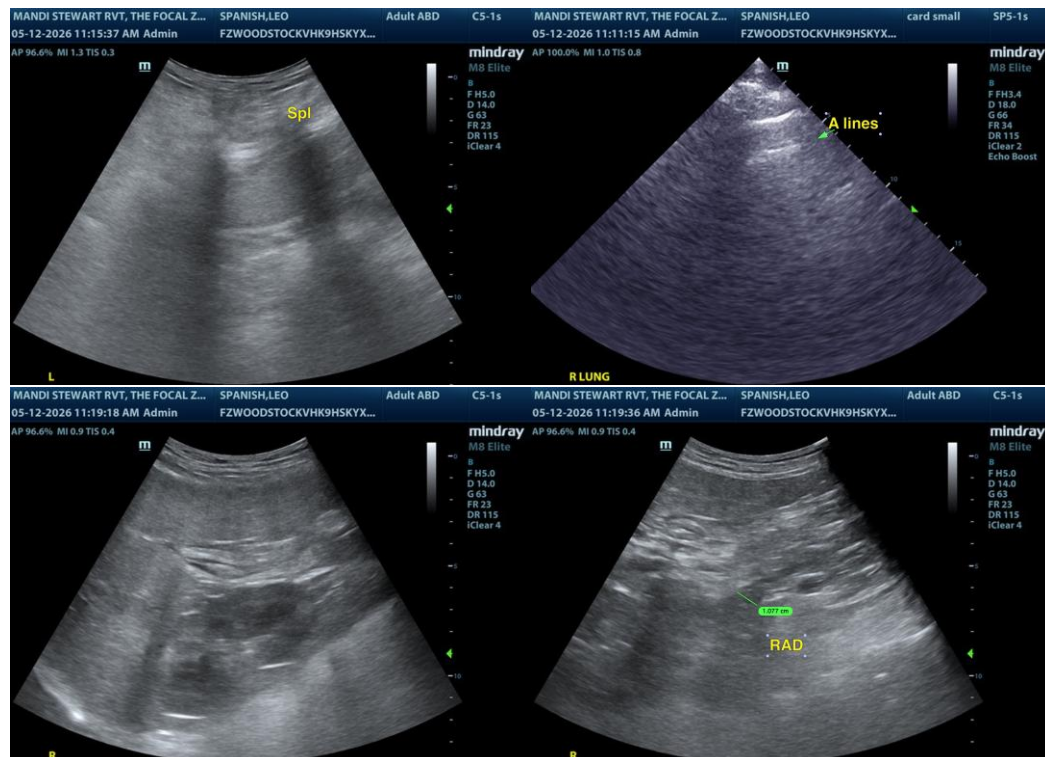
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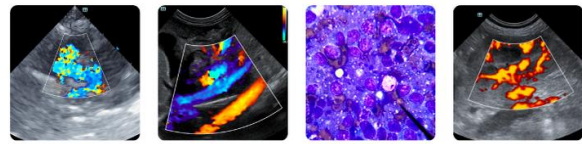
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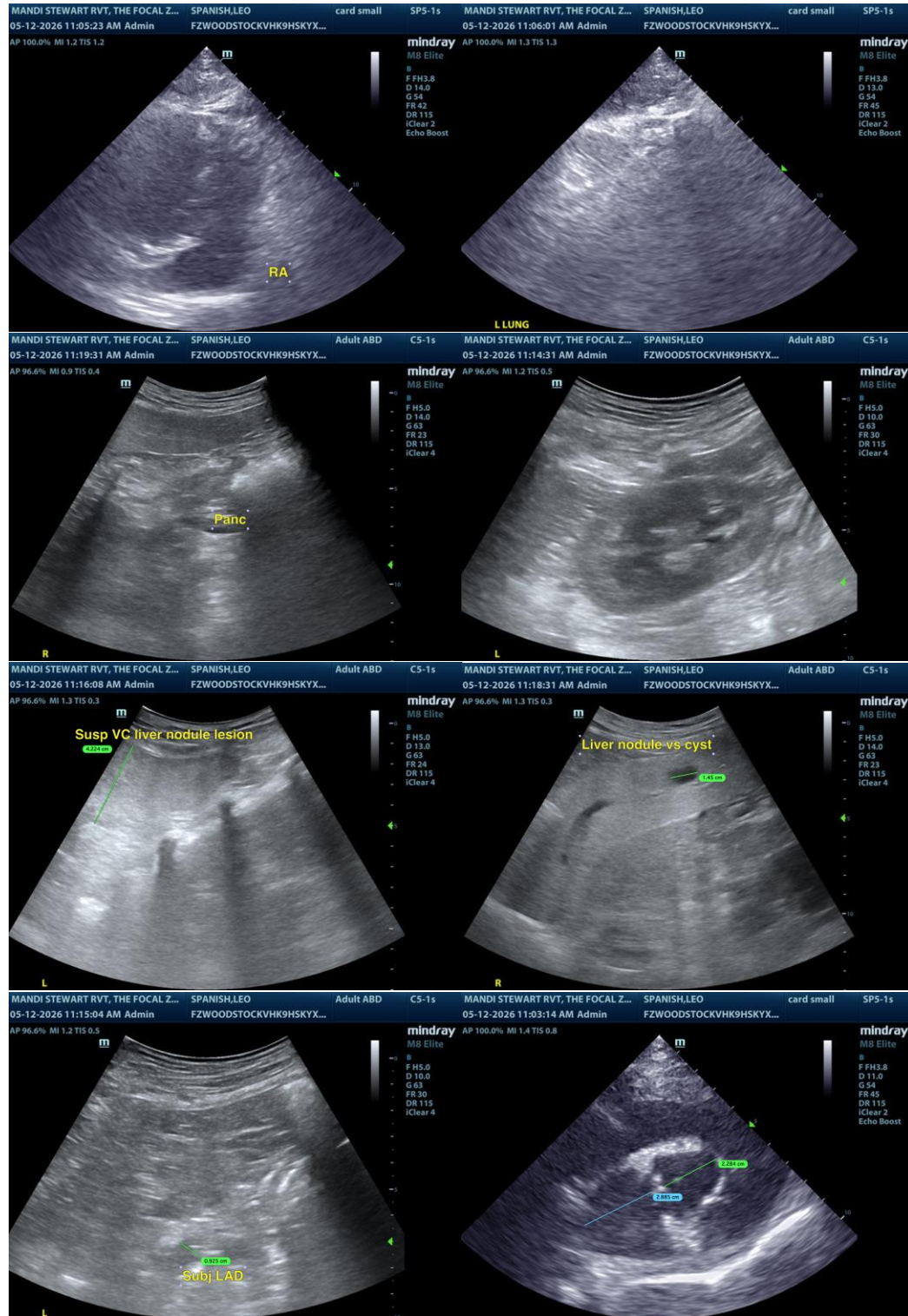
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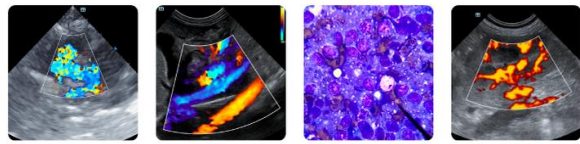
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**PATIENT**

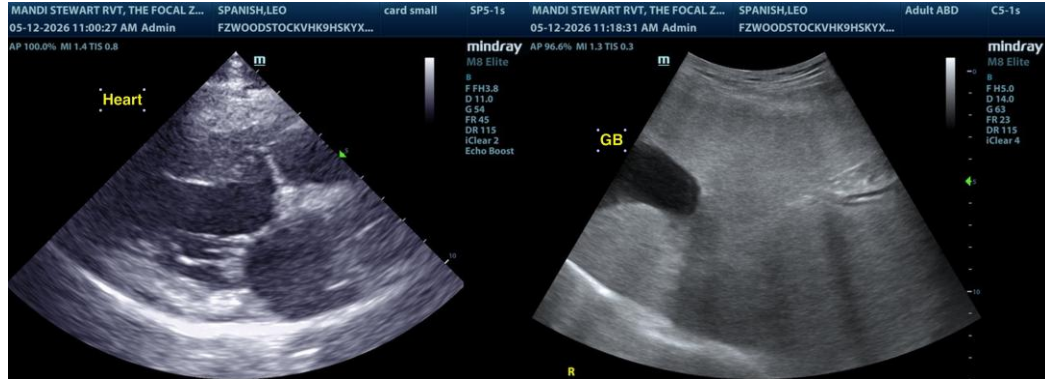
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**BREED**

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**SEX**

MN

**AGE**

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**WEIGHT**

55kg

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.

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