



**PATIENT PRESENTING CLINICAL SIGNS**

**Thunder Selman** Anorexia/marked lethargy x 1 day (acute onset), weight loss of 5 lbs over the past year), labored breathing, febrile. Current meds: Vetoryl 30mgs SID, thyrotabs 0.8 mgs SID. Started on IVF, Unasyn, Baytril, and Buprenex today.

**SPECIES** Abnormal PE/Chem/CBC/UA Results: WBC 4.25/segs 3.62, susp bands; chem: ALK. Phos. 230.

Canine

**ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN**

**BREED**

Alaskan Malamute

**SEX**

Neutered Male

**AGE**

11 Years

**WEIGHT**

92 Pounds

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			1.05	0.9	31	60	0.1
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				
PATIENT	120	1.22	0.66		3.5	3.24	

**INTERPRETED BY**

Eric Lindquist, DMV  
DABVP, Cert. IVUSS

**IMAGING PERFORMED BY**

Kelly Vazquez

**HOSPITAL NAME**

Bergen County VC

**REFERRING VET**

Dr. Laurel Gess

**Cardiac Presentation**

The **left atrium** was subnormal in size owing to volume contraction. The cranial and caudal **mitral valve** leaflets presented normal linear structure, extension in systole, and union in diastole with normal kinesis. 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. **Tricuspid** valvular assessment demonstrated adequate linear morphology and kinesis. 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). Multifocal microconsolidations were noted in the respiratory tree, consistent with pneumonitis or other alveolar disease. A large amount of respiratory artifact was noted. The patient was tachypnea during the exam.

**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 were noted. Ureteral papillae were normal. The residual prostate was uniform at 2.2 cm.

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The **kidneys** were slightly swollen with enhanced surrounding mesentery. The right kidney measured 7.63 cm. The left kidney measured 7.81 cm.



**PATIENT**

Thunder Selman

**Adrenal Glands**

The **left adrenal gland** was slightly enlarged at the cranial pole, measuring 1.27 cm at the cranial pole, 0.88 cm at the caudal pole, and 4.05 cm in length. The right adrenal gland was normal and measured 2.0 cm x 0.8 cm at the cranial pole and 0.5 cm at the caudal pole.

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**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.

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**Liver**

The **liver** images submitted revealed subjectively normal liver size, contour, and structure. Parenchymal echogenicity was naturally coarse and hypoechoic to the spleen. Vascular and biliary tracts were of normal volume with no evidence of congestion. 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.

**AGE**

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Comet tail lung pattern as noted through the diaphragm, indicative of alveolar disease.

**WEIGHT**

92 Pounds

**Gastrointestinal**

Some gastric stasis was noted with kibble. The small intestine and colon were unremarkable.

**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.

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**ULTRASONOGRAPHIC FINDINGS**

**IMAGING PERFORMED BY**

Kelly Vazquez

- Normal to volume contracted heart
- Slightly enlarged left adrenal gland – differentials include likely hyperplasia, minor potential for pheochromocytoma or adenocarcinoma
- Slightly swollen kidneys
- Gastric stasis – likely owing to systemic disease and delayed outflow

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**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

**REFERRING VET**

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Primary respiratory issues such as pneumonitis and thromboembolic disease should be considered as well as neoplasia. However, the heart is free of evident pathology. Serial blood pressures warranted. Primary respiratory protocol based on the radiographic findings recommended.

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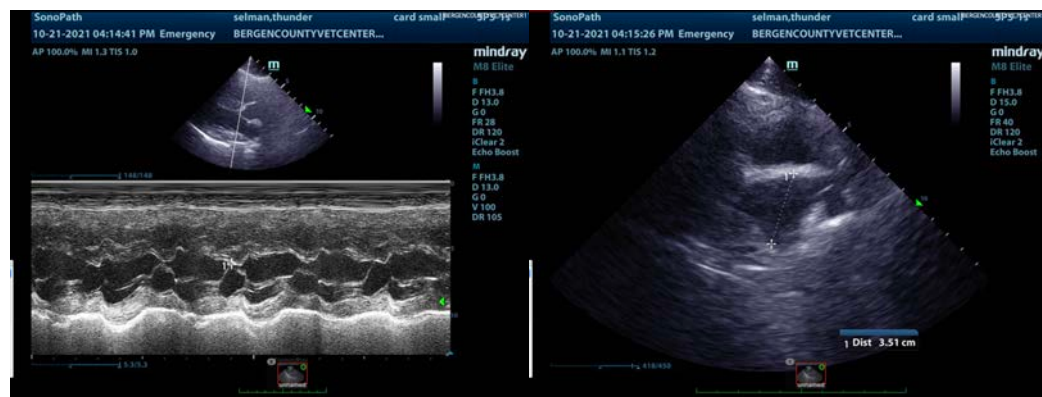
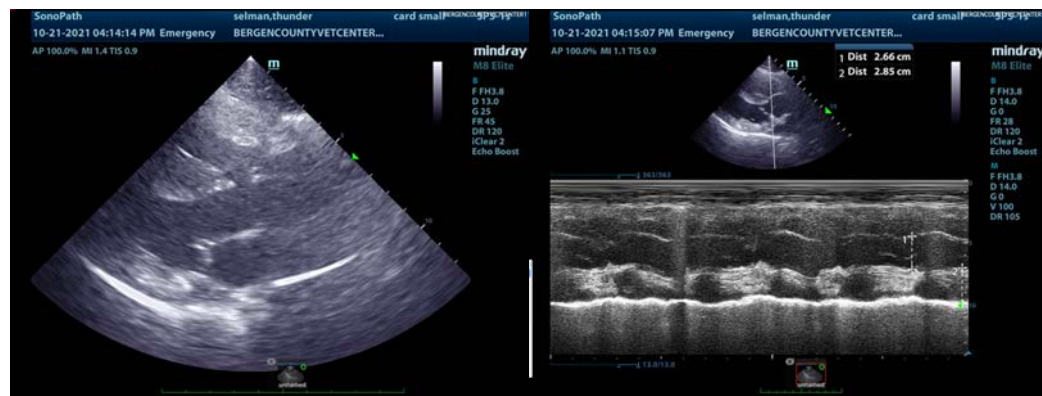
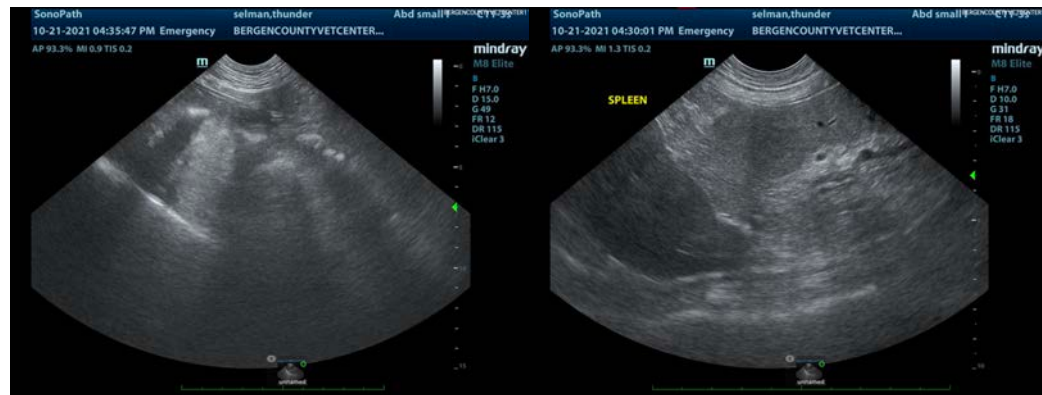
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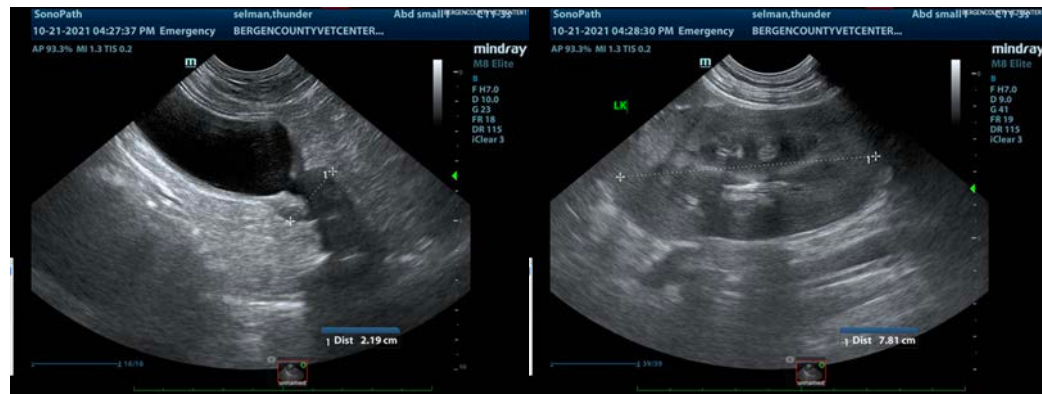
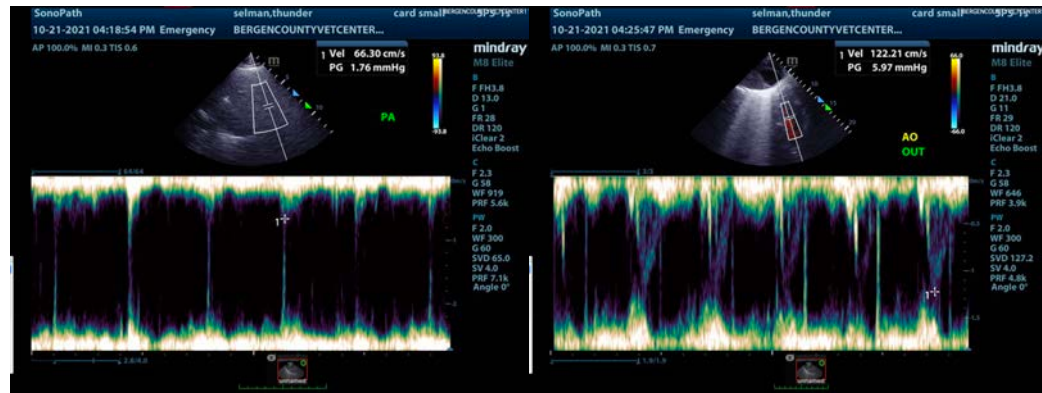
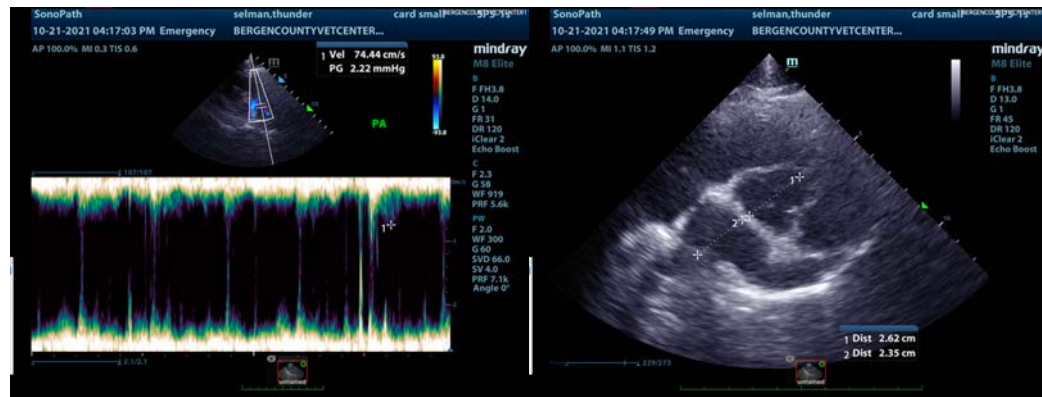
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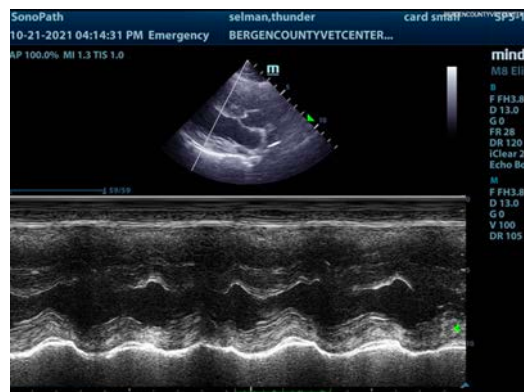
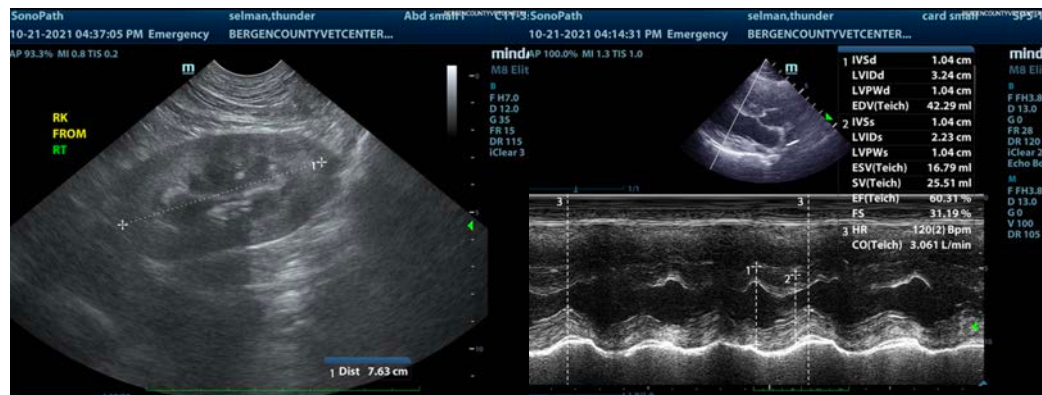
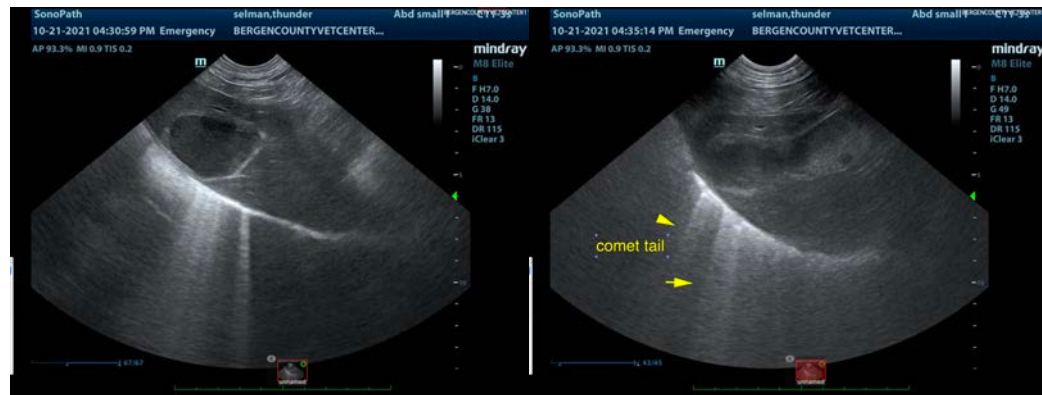
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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