

**PATIENT PRESENTING CLINICAL SIGNS**

Mia Lester Coughing more, esp in the morning. Has had some struggles passing BMs but still eating. Loves fruits and vegetables and eats Perfomatrix diet. Was hiding under bed around Christmas time. PE - Grade 5/6 heart murmur, normal RR and effort and lung sounds, normal mentation but seems quiet, uncomfortable for abdominal palpation and can palpate suspected abdominal mass. Left eye appears to be bulging somewhat. Has been on Apoquel and Clomicalm.

**BREED** Abnormal PE/Chem/CBC/UA Results: Please see attached radiograph

**Pomeranian Mix ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN**

**SEX**

Spayed Female

**AGE**

12.5 Years

**WEIGHT**

10.6 lbs

**INTERPRETED BY**

Eric Lindquist, DMV,  
 DABVP(CFM), Cert.  
 IVUSS

**IMAGING PERFORMED BY**

Crystal Hill

**HOSPITAL NAME**

Beamsville Animal  
 Hospital

**REFERRING VET**

Dr. Hagar

**INVOICE**

15950

**DATE**

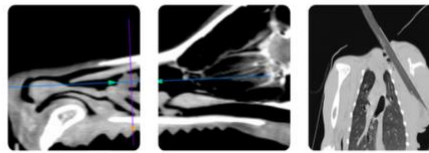
05/08/26

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	5.58	--	1.15	1.2	48	81	NM
CANINE CARDIAC PARAMETERS	HR (BPM)	AV VMAX (m/s)	PV MAX (m/s)	BODY WEIGHT (lbs)	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	166	1.8	1.03	10.6	2.8	2.14	--

**Cardiac Presentation**

The **echocardiogram** presented a prominent **right heart** with mild **right ventricular** hypertrophy. **Tricuspid** regurgitation was evident with relatively contained **right atrial** size. No evidence of neoplasia was noted in the right auricle, or elsewhere in the heart. The **pulmonary artery** was uniformly prominent. No overt heartworms were noted in the main or visible deep pulmonary arteries. Yet theoretically heartworms could be present in the deep pulmonary vasculature out of visible sonographic range. More likely, however, this prominent right heart is due to excessive intra-thoracic pressures caused by respiratory disease or other causes of increased thoracic vascular pressure. The **left heart** demonstrated a linear **ventricular septum**. Contractility was functionally adequate demonstrated by the FS% measurement. The **mitral valve** was not significantly insufficient, and no significant **left atrial** dilation was evident. The **left ventricular outflow** demonstrated normal flow patterns and velocities through the aortic valve. No evidence of tumor, pericardial or pleural effusion was noted. The visible **extra-cardiac** tissues were uniformly linear without evidence of masses, infiltrative or inflammatory mediastinal tissue. No evident arrhythmic activity was noted during the exam. Arrhythmogenic activity was present.

**Urinary System**



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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 **uterine stump** was slightly prominent measuring 0.60 cm. No evidence of inflammation.

The **kidneys** revealed largely normal size and structure, corticomedullary definition and ratio (cortex 1/3 of medulla) were essentially maintained with some age-related loss of curvilinear patterns regarding the capsule and C/M junction. The cortices presented largely uniform texture with some increased echogenicity expected for his age patient. Medullary structure differed distinctly from that of the cortex. Dystrophic mineralization was noted and non-obstructive at this time. The left kidney measured 3.5 cm in length. The right kidney measured 4.5 cm in length.

**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 1.84 cm x 0.53 cm width at the cranial pole and 0.53 cm width at the caudal pole. The right adrenal gland measured 1.65 cm x 1.34 cm width at the cranial pole and 0.48 cm width at the caudal pole.

**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.

**Liver**

*\*See Free Abdomen.*

The remainder of the cranial **liver** and right liver appeared unremarkable. The gallbladder and common bile duct were unremarkable.

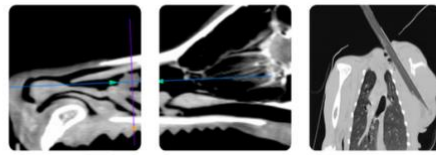
**Gastrointestinal**

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.

**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.

**Free Abdomen**



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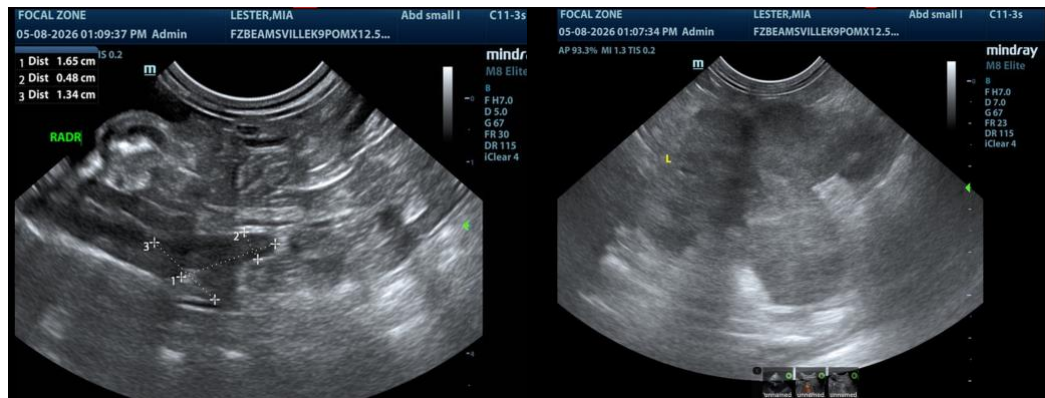
The mid abdomen revealed an undifferentiated 10.0 cm x 4.6 cm **mass effect**. The mass appears to be deriving from the left medial liver extending caudally and impinging upon the spleen. The mass occupies portions of the splenic fossa and deviating the spleen caudally. It appears to be potentially resectable. Regional inflammation was noted, however, this is a surgical urgency as the mass appears pedunculated with mild potential for mass torsion. The liver mass extends in the region of the left pancreatic limb, however, appears to be deviating the pancreas. Portions of the mass are cavitated, potential abscessation.

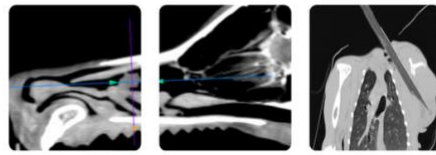
**ULTRASONOGRAPHIC FINDINGS**

- Stage B1 valvular disease with arrhythmogenic activity.
- Mild cor pulmonaly.
- Normal left sided volumes.
- Large sarcomatous type liver mass- appears to be potentially resectable.
- Age-related renal changes with mineralizations.

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

No cardiac medications are recommended at this time. Long lead 2 EKG or Holter monitor would be ideal. FNA of the mass could be considered, however, I recommend either direct exploratory surgery or CT for surgical planning. The mass appears to be isolated and yet there is significant amount of inflammation and there is a risk for rupture. Sarcoma versus carcinoma are primary concerns, necrotic adenoma is possible, yet less likely.





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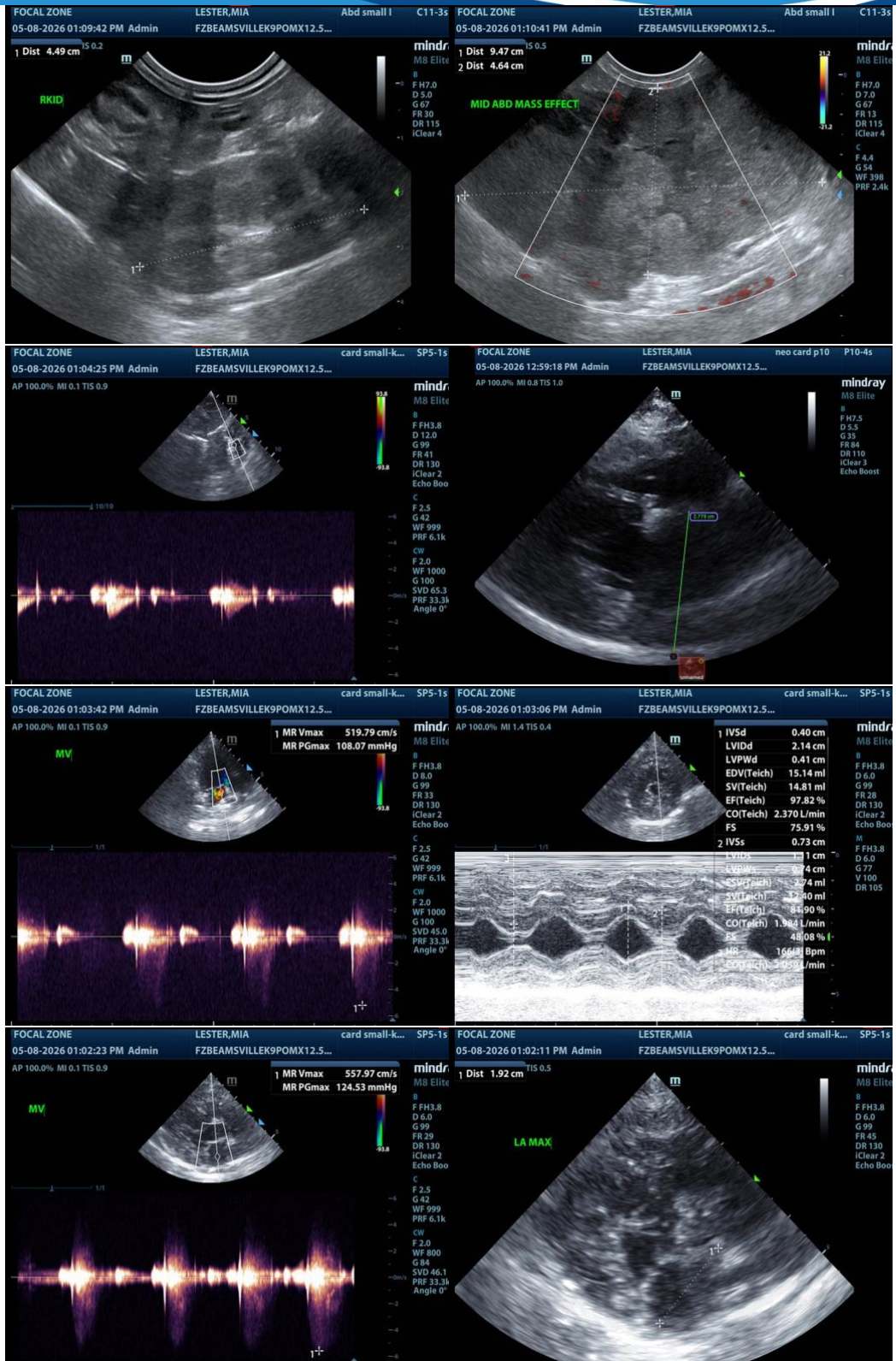
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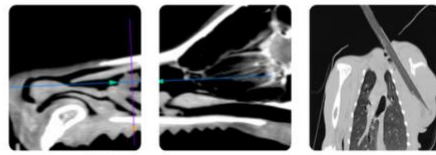
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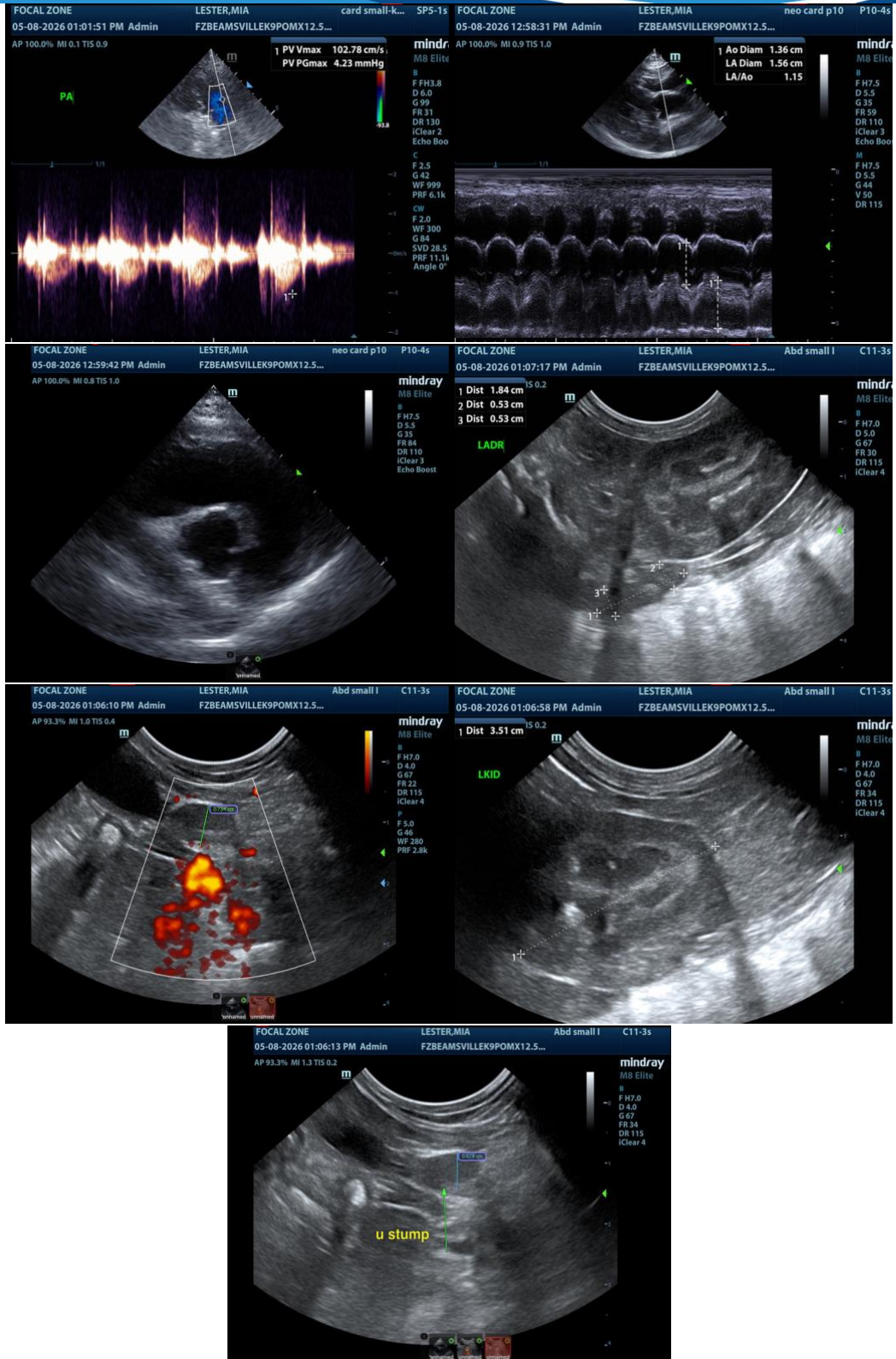
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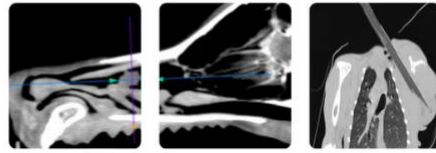
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**PATIENT**

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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.

**SPECIES**

Canine

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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**Eric Lindquist**, DMV, DABVP(CFM), Cert. IVUSS,

CEO, Owner, Founder -- SonoPath.com

[info@SonoPath.com](mailto:info@SonoPath.com)

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