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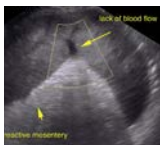
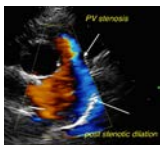
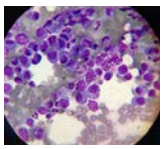
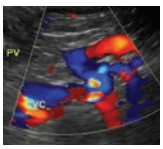

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1-800-838-4268 info@sonopath.com

PATIENT
Nova Dunning

SPECIES
Canine

BREED
Lab X

SEX
Spayed Female

AGE
10 Years

WEIGHT
22.7 kg

INTERPRETED BY
Eric Lindquist, DMV DABVP, Cert. IVUSS

IMAGING PERFORMED BY
Patti Mayfield, DVM Smiling Dog VS

HOSPITAL NAME
Bend Animal Emergency Specialty Center

REFERRING VET
Adam Stone, DVM

INVOICE
26011

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9/30/21

PRESENTING CLINICAL SIGNS

Patient presented to primary care DVM on 9/21/21 for concern of 4 day duration of cough and lethargy. Patient had distemper as a puppy. No recent travel outside of the PNW. Physical exam was unremarkable. Thoracic rads and blood work performed; radiographs reviewed at Sonopath. Primary DVM was concerned with potential pneumonia and began supportive care with Unasyn, Baytril, Cerenia and IVF. Repeat radiographs (thoracic) performed on 9/29/21 with concern for pleural effusion. Patient was referred to BAESC for second opinion. Patient is lethargic with mild dyspnea, but continues to eat well.
Abnormal PE/Chem/CBC/UA Results: 9/21/21: CBC/Chem-10: NSF 9/29/21: Thoracic radiographs were interpreted by Sonopath; concerns for mild pleural effusion, hilar lymphadenopathy and diffuse interstitial lung pattern

ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

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			1.02		45	79	0.24
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					2.1	2.53	

Cardiac Presentation

The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 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. 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). The cranial mediastinum revealed an undifferentiated mixed hypoechoic 7.4 cm mass with regional pleural effusion. This is non-cardiogenic in nature. Regional lymph nodes were also enlarged. Nodular pleura also noted.

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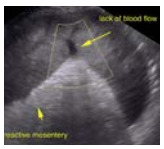
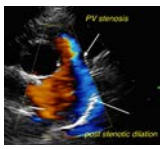
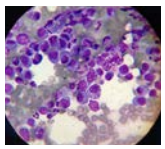
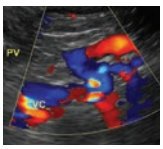

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Urinary System

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 iliac trifurcation was unremarkable.

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 and no evidence of pelvic dilation was present. The capsules were acceptably uniform without significant irregularities. The left kidney measured 5.78 cm. The right kidney measured 5.81 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 right adrenal gland measured 1.2 cm at the cranial pole and 0.56 cm at the caudal pole. The left adrenal gland measured 0.53 cm at the cranial pole and 0.54 cm at the caudal pole.

Spleen

The **spleen** was enlarged with subtle micronodular changes. Splenic vein thrombus was noted in the mid body of the spleen. The spleen measured 2.6 cm in width.

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 presented acceptably thin walls with primarily anechoic content. The cystic and common bile ducts were normal. No pathological hepatic lymphadenopathy was evident. No overt structural evidence of inflammatory, infiltrative or regenerative pathology was evident.

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.

ULTRASONOGRAPHIC FINDINGS

- Non-cardiogenic pleural effusion with cranial mediastinal mass – thoracic neoplasia to be defined
- Splenic enlargement and concurrent splenic thrombus – possibility of round cell neoplasia, may be related to the thoracic pathology

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

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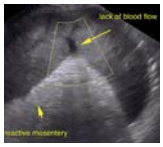
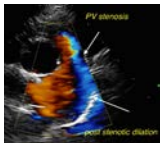
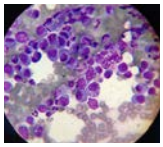
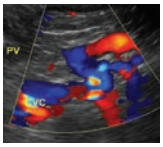

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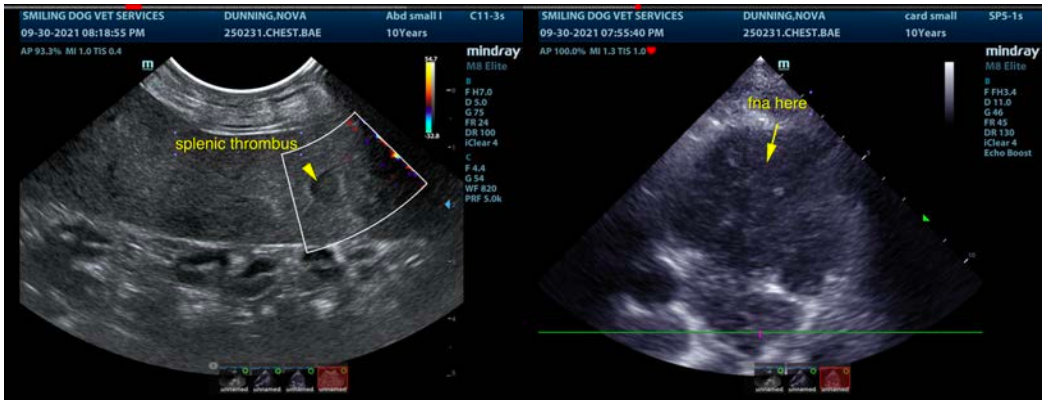
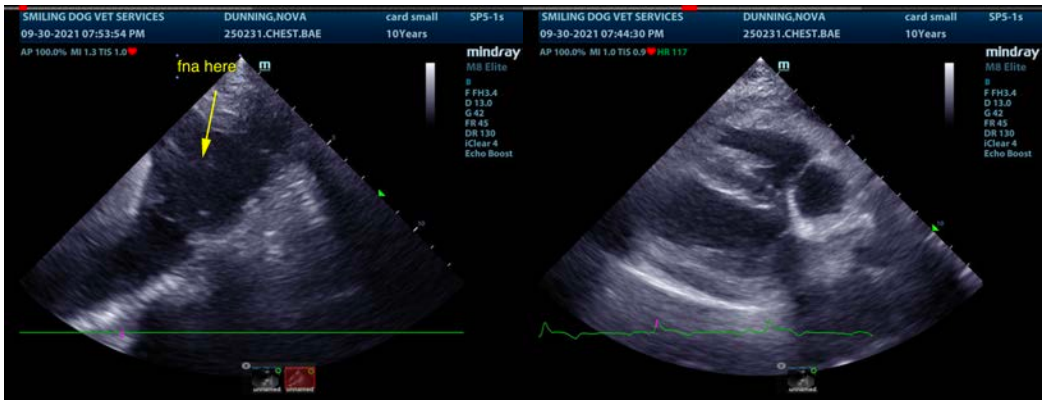
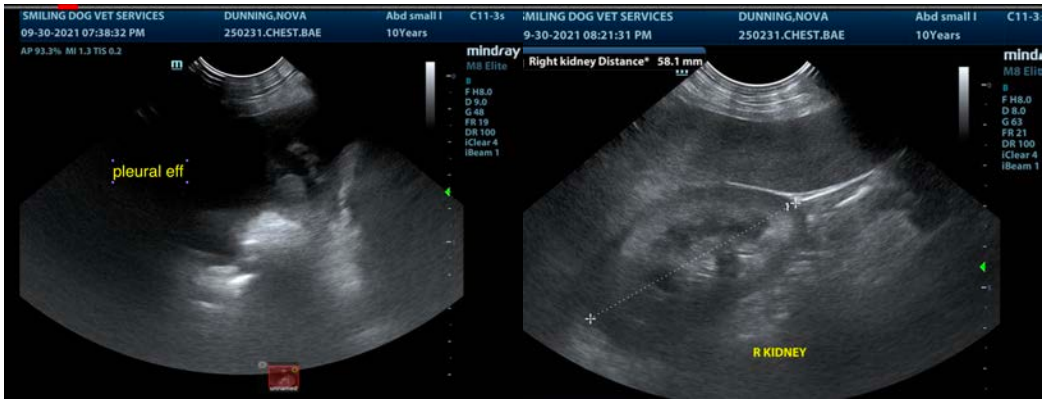
Splenic FNA and thoracic mass FNA +/- pleurocentesis with cytospin. This is not a surgical thorax. Prognosis is poor depending upon chemoresponsiveness to the thoracic pathology.







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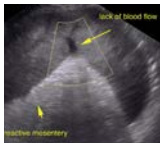
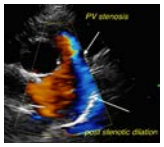
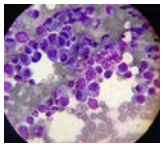
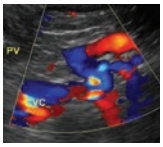

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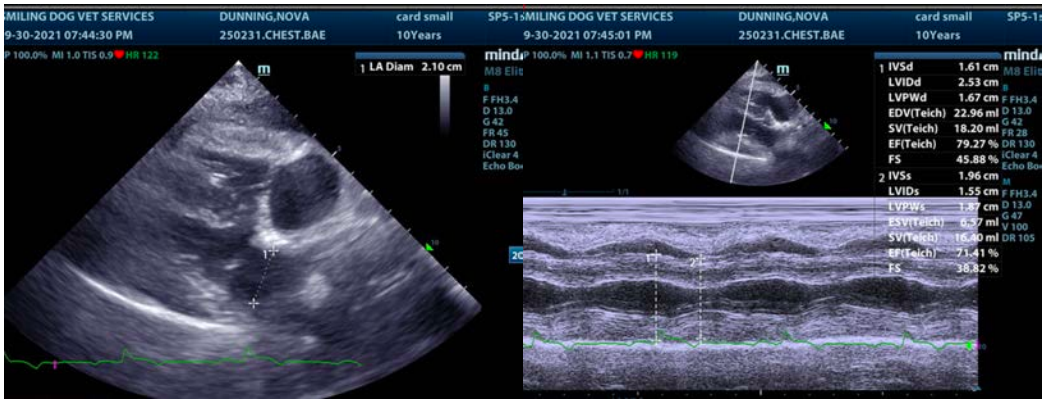

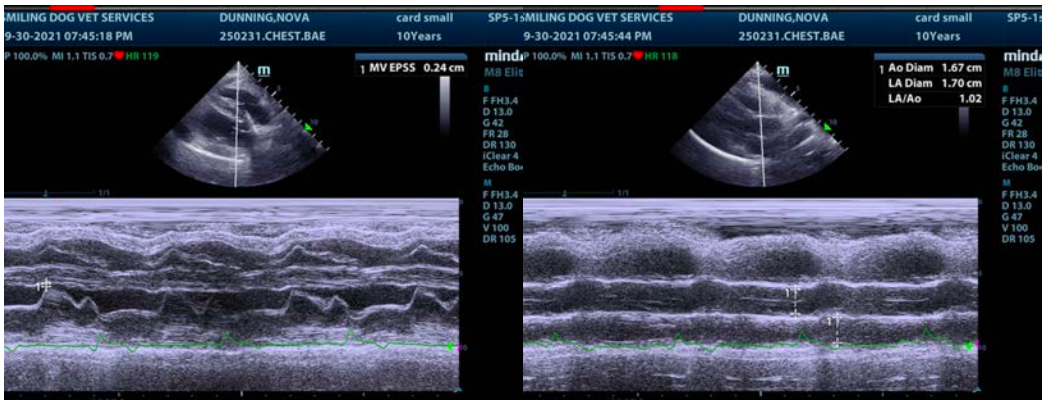

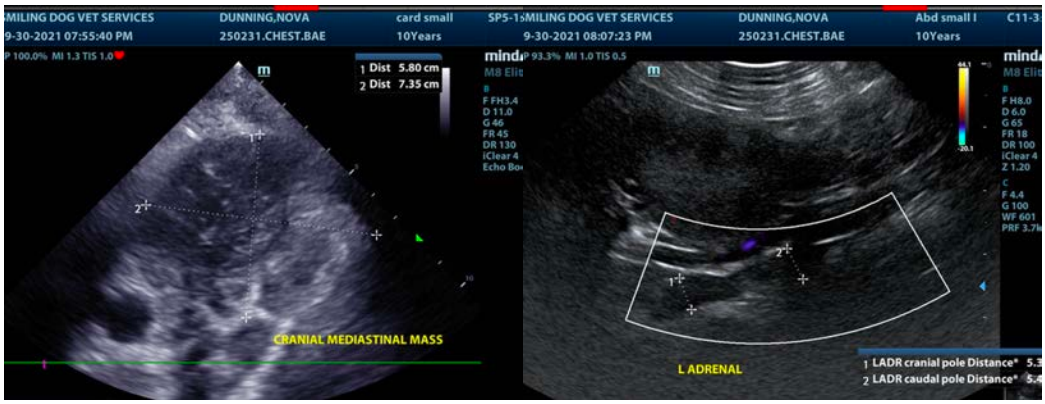

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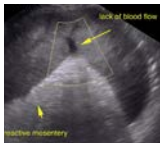
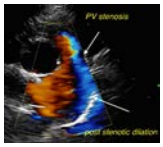
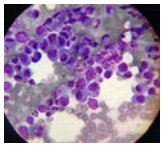
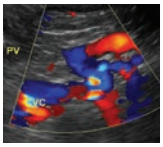

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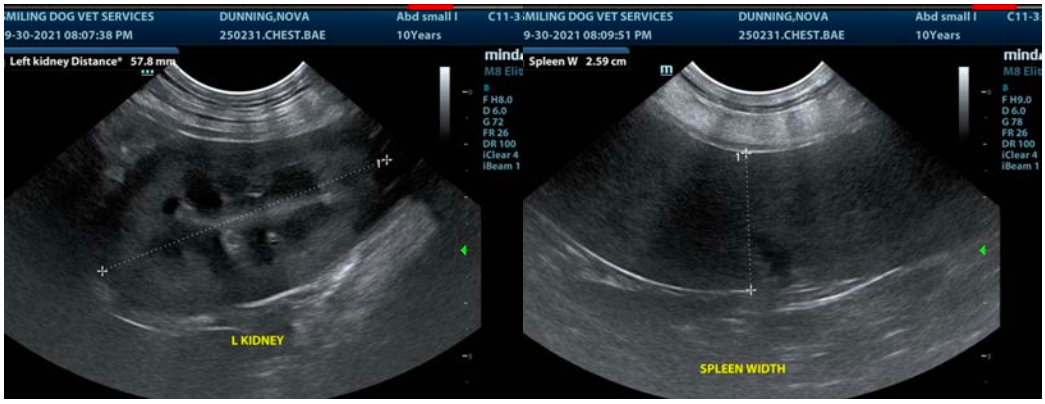

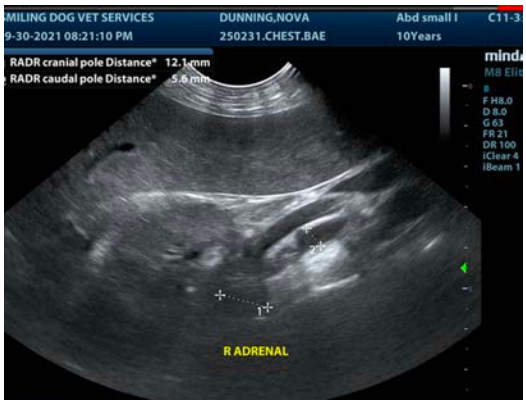

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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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
info@SonoPath.com