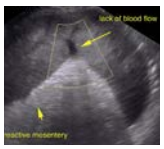
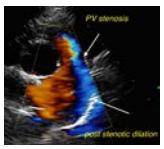
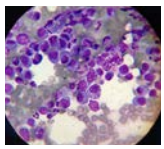
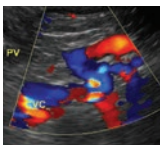
SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™

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

PATIENT
Winston Bastian

SPECIES
Canine

BREED
Lab

SEX
Male

AGE
6

WEIGHT
70

INTERPRETED BY
Eric Lindquist, DMV
DABVP, Cert. IVUSS

IMAGING PERFORMED BY
Dr. Hunt

HOSPITAL NAME
Bayshore VH

REFERRING VET
Dr. Hunt

INVOICE
47175

DATE
5/5/23

PRESENTING CLINICAL SIGNS

Document for gastroenteritis on Monday was seen by the other veterinarian. Treated for diarrhea. Came back on Wednesday doing worse. Again evaluated gastroenteritis determined Dog was worse put on IV fluids given Cerenia and metronidazole and ampicillin. Late yesterday afternoon other doctor noticed that there is some slight slight swelling above the right eye in the skin and thought it might be allergy not sure continue with same medicines by this morning the dog's face was very swollen and was some edema in the front and rear limbs. Dog was on IV fluids the whole time. No fever. All blood work okay including CBC. Double cavity ultrasound here and what we were thinking initially was this Dog was allergic to one of the medicines thus of swelling of the face and now worsening free fluid in abdomen and what appears to be a halo sign on the gallbladder. This is an anaphylactic reaction leading to so much ascites? Never seen ascites quite like this with an anaphylaxis but I cannot say that I have not really ultrasound a lot of anaphylactic animal's to see if there is subsequent ascites down the road. Subsequent heart ultrasound to me subjectively does look like the contractility is not as great as it should. So rule outs here are DCM, allergic, pancreatitis, some mix of all of the above.

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			NM	1.4	20-25		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	BELOW	BELOW	BELOW	BELOW
PATIENT					3.4		

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** appeared mildly subnormal. 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). No visible **pericardial** or free pleura fluid was noted. The cranial **mediastinum and pericardial and extra-cardiac regions** were free of masses in the visible window.

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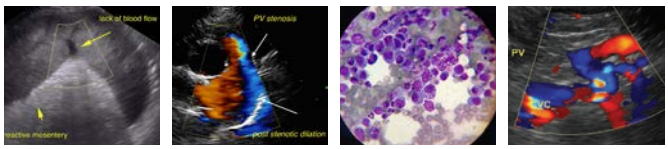

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Urinary System

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 pelvic urethra was imaged 3.0 cm beyond the cystourethral junction.

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 right kidney measured 6.88 cm. The left kidney measured 7.0 cm.

Adrenal Glands

The **left adrenal gland** was 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 2.4 cm x 0.43 cm at the caudal pole and 0.54 cm at the cranial pole.

The **right adrenal gland** was not visualized.

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

The **liver** was uniform. Parenchyma was hypoechoic to falciform fat. No overt structural pathology. The gallbladder and common bile duct were unremarkable. The portal vein was not visible.

Gastrointestinal

The **stomach** was significantly thickened (up to 2.2 cm), with gastric stasis. Gastric wall measured 1.3 cm serosa to lumen. Some loss of mural detail noted. This is most consistent with gastritis. The upper duodenum was spastic, with a minor amount of fluid filled lumen. The colon was unremarkable other than soft stool.

Pancreas

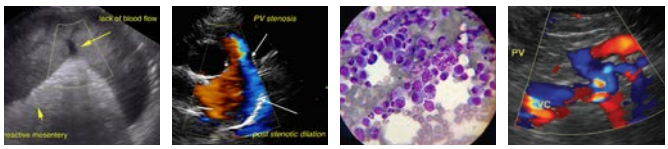
The **pancreas** revealed a significant amount of edema. Heterogeneous parenchymal changes noted. Enhanced surrounding mesentery. Consistent with passive edema or pancreatitis.

Free Abdomen

Mild ascites noted in the abdomen. Enhanced omentum noted throughout the mid abdomen.

ULTRASONOGRAPHIC FINDINGS

- Severe gastric thickening – gastritis likely, underlying neoplasia possible but less likely
- Pancreatic edema



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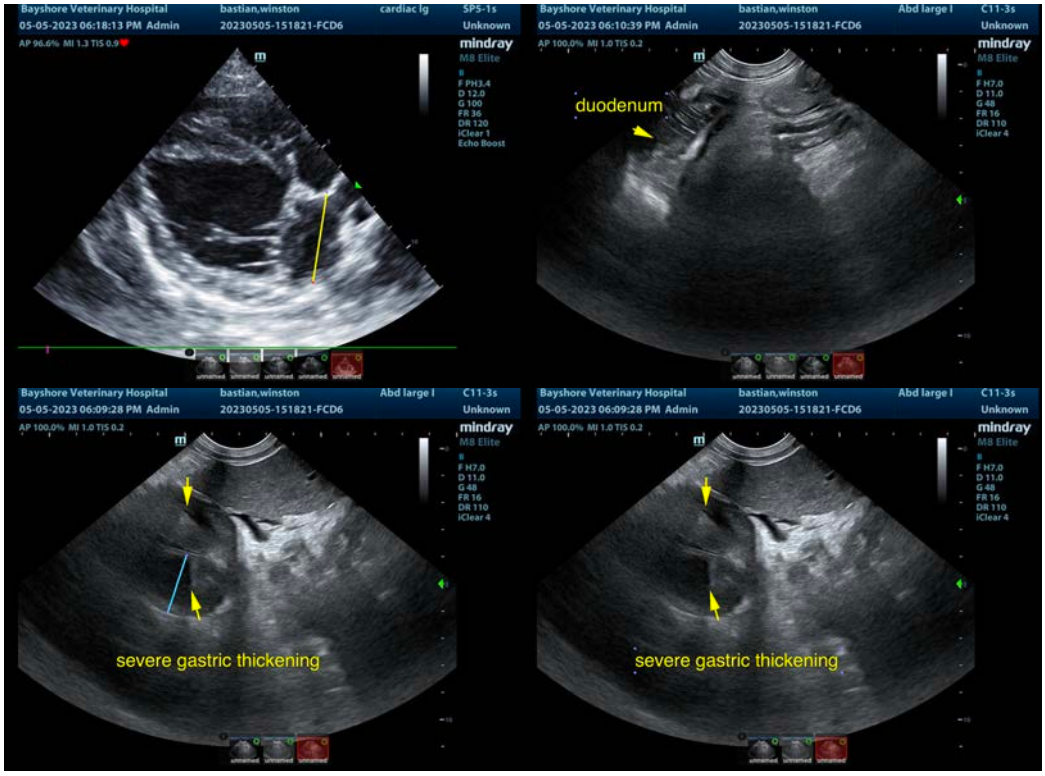
- Hypoechoic liver
- Ascites

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The heart may be shocky, as contractility appeared to be mildly subnormal. No evidence of primary cardiac disease noted. However, effector organ phenomenon may be playing a role, given the hypocontractility.

The liver was structurally unremarkable. The ascites is perplexing in this patient. I'm concerned, given the gastric thickening and pancreatic edema, that underlying portal vein thrombus may be an issue, causing pre-hepatic portal hypertension, as the liver appeared structurally unremarkable. No passive congestion was noted that would be responsible for the ascites.

Abdominocentesis and cytospin of the free fluid indicated. Further imaging of the portal hilus would be indicated with portal vein doppler assessment as well as high resolution imaging of the portal vein to assess for portal vein thrombosis. Screening for Addison's indicated, given that the right adrenal gland was not visualized. GI protectant protocol, plasma expanders, treatment for shock all indicated. Full coagulation panel warranted to assess for hypercoagulable state that may be associated with potential thrombosis, particularly portal vein thrombosis. Prognosis is very guarded. Some level of pancreatitis may be present. However, the pattern is more consistent with pancreatic edema, which would fit with portal vein thrombosis.



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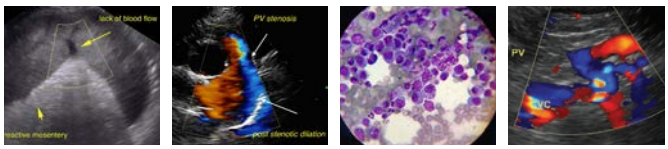

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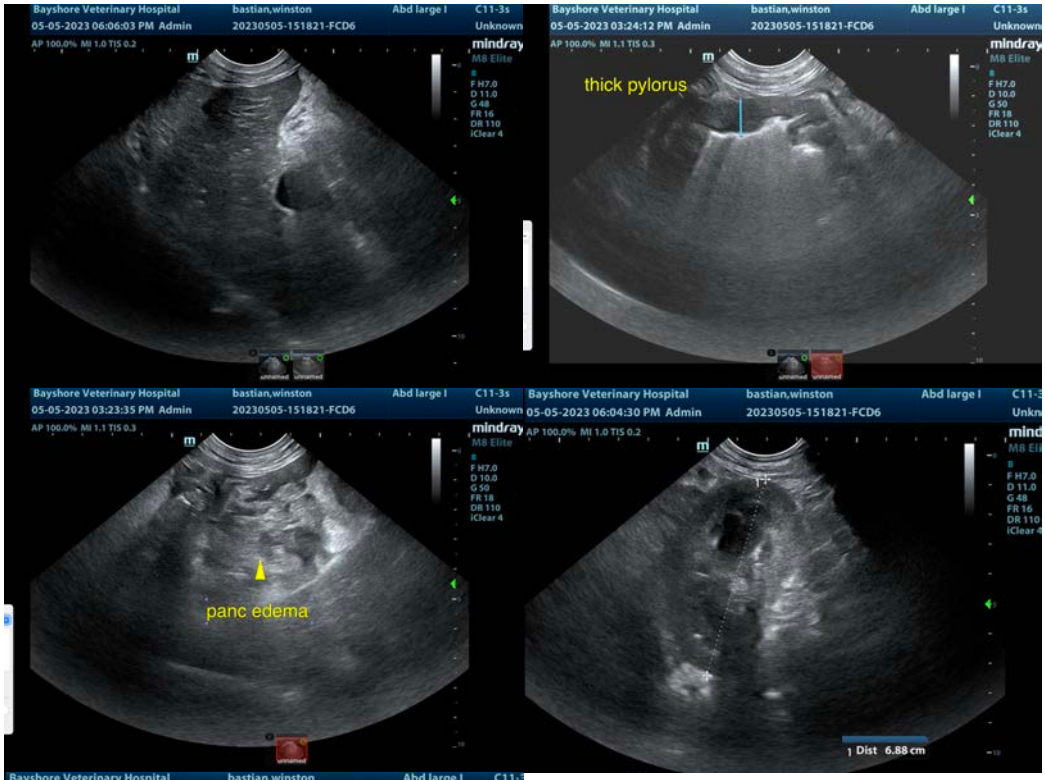

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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