



**PATIENT**

Jersey Ward

**PRESENTING CLINICAL SIGNS**

Patient is on Levothyroxine, Benadryl, Gaba, Pepcid, and Yunnan Baiyao

**SPECIES**

Canine

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Urinary System**

**BREED**

Golden Cross

The **bladder** in this patient was mildly thickened with slight echogenic mural changes. No calculi or masses were noted. Slight micropolypoid changes were noted. This is a frequent finding in older animals and may be linked to a history of chronic urinary tract infection or active urinary tract infection. Urinalysis would be recommended with culture if any evidence of inflammatory sediment is present. The region of the trigone and visible pelvic urethra were normal.

**SEX**

Spayed female

**AGE**

12 years

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 and no evidence of pelvic dilation was present. The right kidney each measured 7.6 cm. The left kidney measured 5.98 cm.

**INTERPRETED BY**

Eric Lindquist, DMV  
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**Adrenal Glands**

**IMAGING PERFORMED BY**

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The **left adrenal gland** was slightly enlarged and mildly irregular measuring 2.35 x 1.08 cm at the cranial pole and 0.82 cm at the caudal pole. The left adrenal gland was imaged from the right and left side. The left adrenal gland appeared encapsulated; however, phrenic vein occupation was noted to the level of the vena cava. This is suggestive for thrombus or emerging neoplastic event. Given the presumed hemangiosarcoma, hypercoagulable state and phrenic vein thrombus is suspected. However, the cranial pole of the left adrenal gland was nodular and therefore, pheochromocytoma or adenocarcinoma are potentials. The **right adrenal gland** was slightly heterogenous, yet fairly normal in size and contour. The right adrenal gland measured 2.5 x 1.2 cm at the cranial pole and 0.6 cm at the caudal pole.

**HOSPITAL NAME**

The Highland VH

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**Spleen**

**INVOICE**

42528

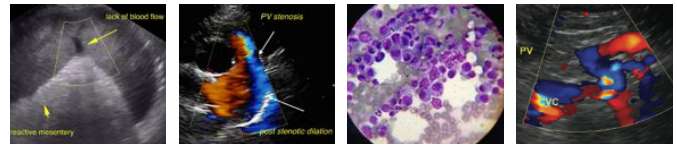
The **spleen** presented multi-focal, disrupted nodular changes with mass effects throughout the spleen and enhanced surrounding mesentery. This is strongly suggestive for hemangiosarcoma. Areas of cavitation were noted throughout. The masses coalesced amongst each other. The largest mass measured approximately 4.0 cm.

**DATE**

2/2/23

**Liver**

The **liver** in this patient revealed a multi-focal, hypoechoic, disruptive nodular changes and an overt 6.0+ cm, mixed, hypoechoic, ill-defined, poorly marginated right cranial liver mass. Slight free fluid was noted between the liver lobes. 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.



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**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.

**SPECIES**

Canine

**BREED**

Golden Cross

**Pancreas**

The base and limbs of the **pancreas** were observed to be largely isoechoic to surrounding omental fat. Some parenchymal remodeling, however, with mild deviation from curvilinear normalcy was observed. Pancreatic duct and capsular irregularities were present consistent with age related changes. If pain upon imaging (+ Murphy sign) was present or if the patient is focally painful in subxiphoid palpation then low-grade smoldering chronic pancreatitis should be suspected.

**SEX**

Spayed female

**AGE**

12 years

**Free Abdomen**

The iliac trifurcation was unremarkable.

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**ULTRASONOGRAPHIC EXAMINATION OF THE HEART**

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 auricular** free wall in this patient revealed a nodular mass that measured 2.62 x 2.4 cm. The mass was imaged from the left and right approaches and was persistently present. **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). Trace pericardial effusion was noted in the right heart adjacent to the mass, yet this is not causing a tamponade effect and was minimal.

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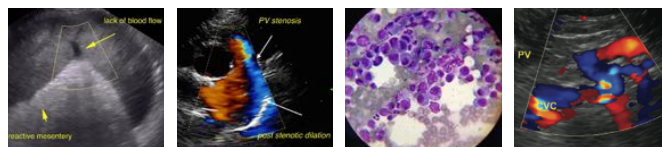
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CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base;)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
PATIENT			1.0	1.0	43	75	0.1
CANINE CARDIAC PARAMETERS	HR (BPM)	AV VMAX (m/s)	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	106	1.38	0.78		3.51 max	3.65	

**ULTRASONOGRAPHIC FINDINGS**

**INTERPRETED BY**

Eric Lindquist, DMV DABVP, Cert. IVUSS

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- Multi-centric hemangiosarcoma pattern with multiple splenic masses. Metastatic nodules and mass to the liver.
- Irregular left adrenal gland with nodular change and phrenic vein occupation.
- Right auricular mass with trace, early pericardial effusion.

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Thrombosis owing to hypercoagulable state from presumed multi-centric-hemangiosarcoma versus adenocarcinoma or pheochromocytoma with phrenic vein invasion. This is an ancillary incidental finding, yet blood pressure measurements are recommended. I recommend oncological intervention. Chemotherapeutic intervention is likely necessary with follow-up ultrasound 3 days post treatment and follow up every 3 weeks at that point. The prognosis is poor long term. However, some quality of life can be obtained with chemotherapy.

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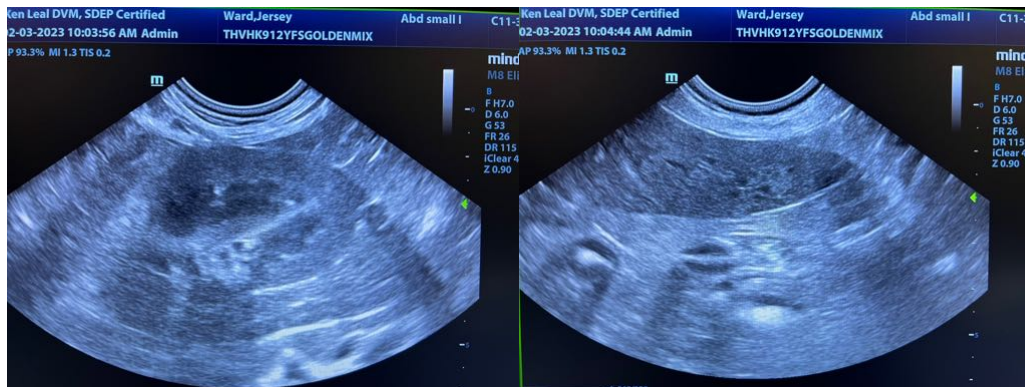
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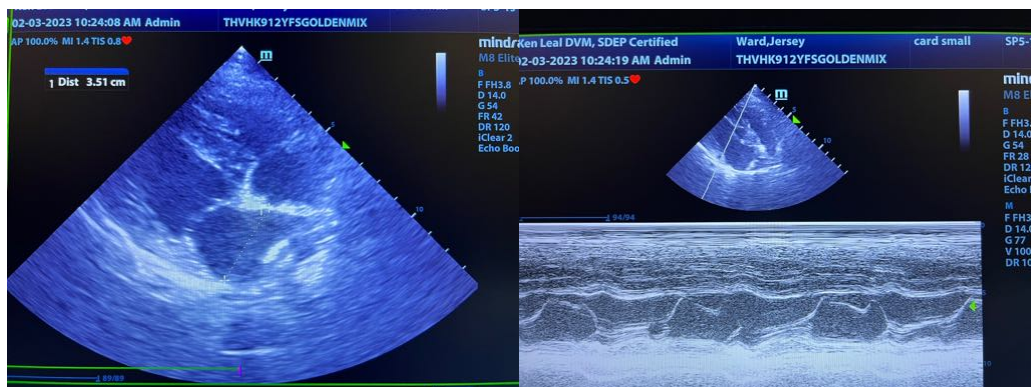
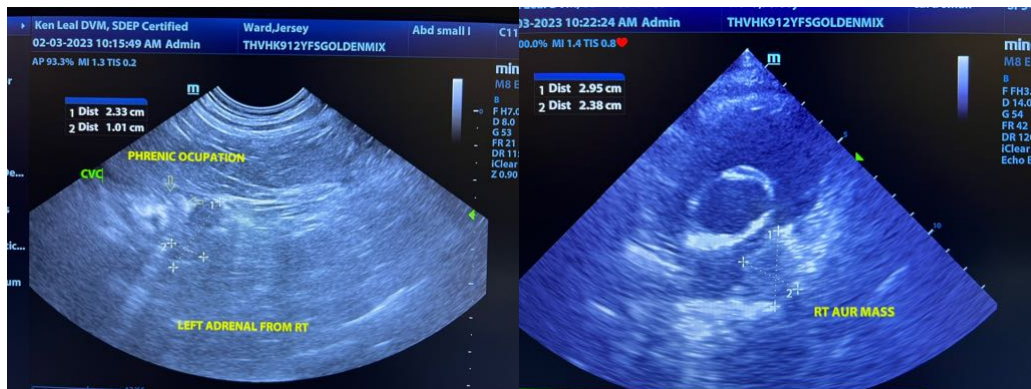
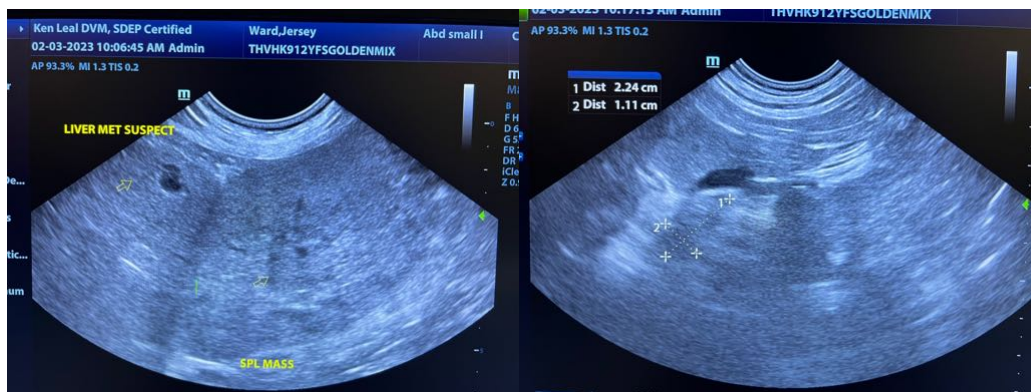
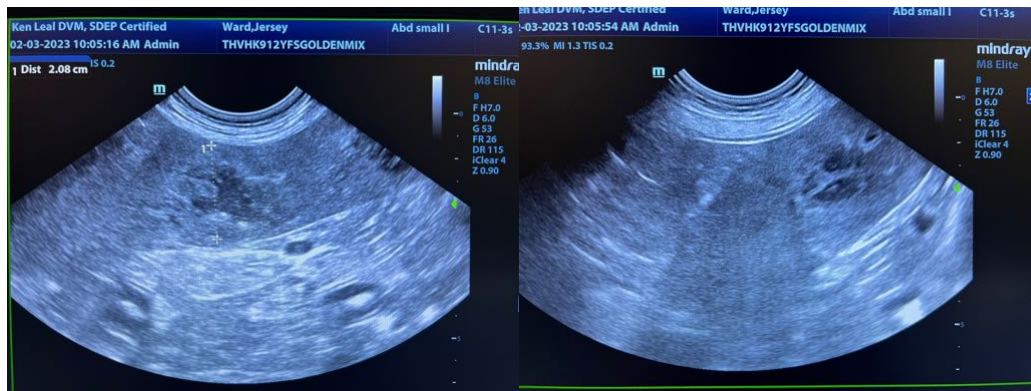
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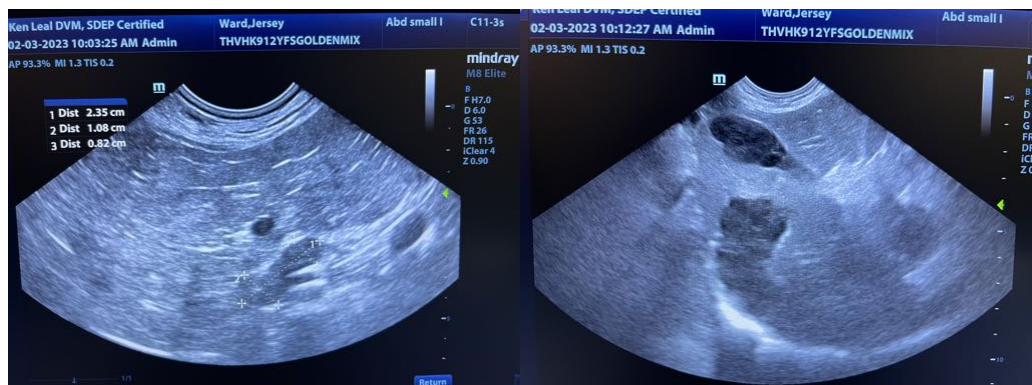
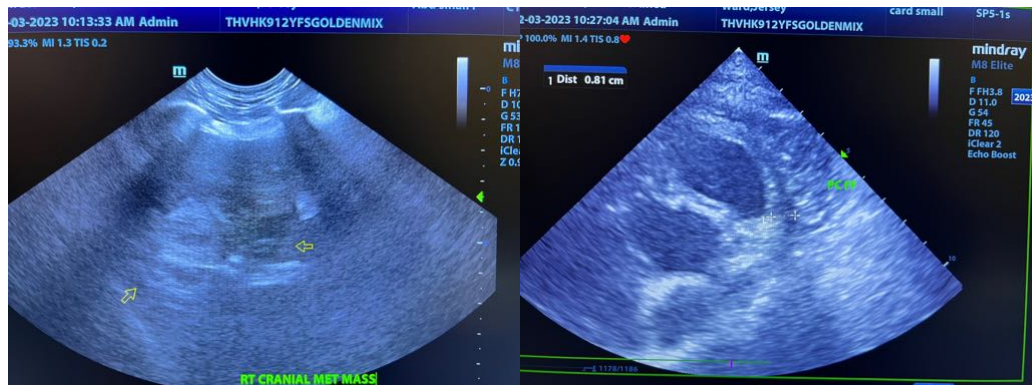
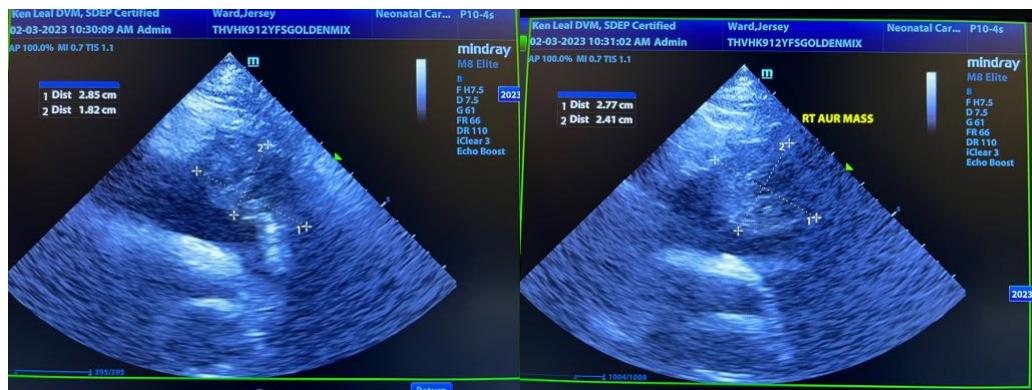
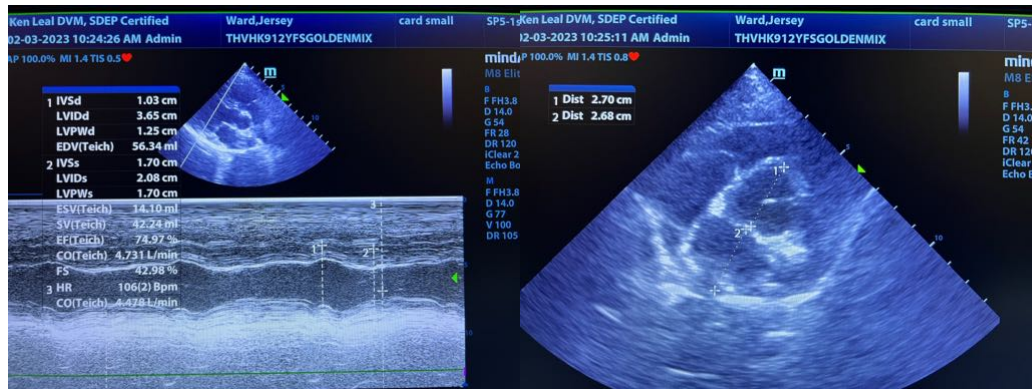
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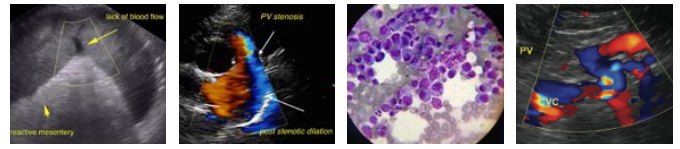
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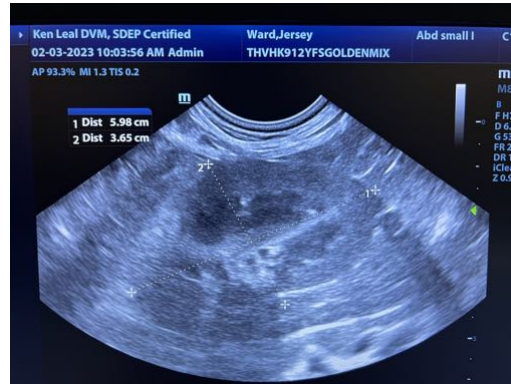
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

**INTERPRETED BY**

Eric Lindquist, DMV  
DABVP, Cert. IVUSS

**Eric Lindquist**, DMV, DABVP, Cert. IVUSS, CEO of SonoPath.com  
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