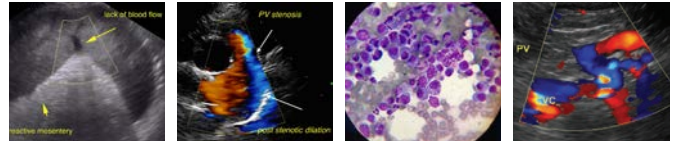




<b>PATIENT</b>	<b>PRESENTING CLINICAL SIGNS</b>
Molly Hoachlander	Molly is a 11.5 year old FS beagle. She presented on 3/11/22 for her annual wellness appointment. Her spleen felt low and prominent in her abdomen. Wellness bloodwork had the following abnormalities: low hematocrit (36.8, 38.3-56.5), low hemoglobin (12.4, 13.4-20.7), low MCH (21.3, 21.9-26.1), low retic hemoglobin (23.0, 24.5-31.8), high potassium (5.8, (4-5.4), high ALP (267, 5-160), high amylase (1806, 337-1469), high lipase (449, 0-250), low TT4 (0.8, 1.0-4.0). Her cPL =412. Her CBC is being rechecked to today to check for acute changes and a UA is being submitted. A TT4 value will be rechecked in 3-4 months. An U/S was advised to be proactive given her prominent spleen. A blood pressure was checked during US exam today : 165/88, 162/88 SDEP Echo position 3 is included as well.
<b>SPECIES</b>	
Canine	
<b>BREED</b>	
Beagle	
<b>SEX</b>	<b>ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN</b>
Spayed Female	<b>Urinary System</b>
<b>AGE</b>	Although the urinary bladder is inadequately filled, it is obvious that its wall is markedly thickened and mildly to moderately irregular. Free-floating echogenic debris is present within the lumen. No abnormalities are present with the trigone or proximal urethra, and there is no evidence of cystoliths, polyps, or a mass. Based on the appearance of the urinary bladder, a bacterial cystitis is strongly suspected. A urinalysis, culture and sensitivity are recommended. If the culture is negative, a urine protein/creatinine ratio is suggested.
11 Years	The left kidney measures approximately 4.9 cm (underestimated due to angle). It has a smooth, but rounded, shape; it may appear more rounded due to it not being a fully longitudinal image. The cortex is thicker than normal and mildly to moderately hyperechoic. A mild loss of the normal definition of the corticomedullary junction is observed. Mineralizations of the diverticulae and pelvis are present, without signs of nephroliths or pyelectasia. Accumulation of intrapelvic fat is also noted. Subjectively, blood flow appears increased, which is suggestive of hypertension; this is consistent with the mild elevation of Molly's systemic blood pressure during today's exam.
<b>WEIGHT</b>	The right kidney measures 6.4 cm. Similar changes are observed compared to the left kidney. Its blood flow is also increased, therefore, systemic hypertension is suspected.
35 Pounds	<b>Adrenal Glands</b>
<b>INTERPRETED BY</b>	The left adrenal gland measures 0.56 cm at the cranial pole and 0.44 cm at the caudal pole, and 2.12 cm in length. No abnormalities are noted in the gland's shape, overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.
Lisa Carioto, DVM, DVSc, Diplomate ACVIM	A mass of the right adrenal gland is observed. The mass measures approximately 4.0 cm in length x 1.8 cm in diameter. There is a loss of its normal shape and architecture. The gland is diffusely heterogeneous with areas of hypo-, hyper-, and anechoic ill-defined areas. The hyperechoic regions, which do not shadow, may be due to mineralization, fat or fibrosis. Invasion with marked distortion of the phrenicoabdominal vein is evident.
<b>IMAGING PERFORMED BY</b>	Within the caudal vena cava is a well-circumscribed, smooth mass effect, measuring 2.7 cm in length x 1.3 cm in height; it obstructs blood flow. The lesion is suggestive of a thrombus based on its smooth definition, however, a metastatic lesion cannot be excluded. Further cranially towards the liver, an ill-defined echogenic mass effect is observed within the caudal vena cava, which looks more suggestive of a metastatic lesion.
Dr. Jennifer Todd	A cavitory mass measuring 2.2 cm in length x 1.2 cm in height is identified dorsal to the caudal vena cava. It is most likely a cystic lymph node, possibly due chronic lymphadenitis.
<b>HOSPITAL NAME</b>	
Lambs Gap AH	
<b>REFERRING VET</b>	
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<b>INVOICE</b>	
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<b>DATE</b>	
3/14/22	



<b>PATIENT</b>	<b>Spleen</b>
Molly Hoachlander	The head and body of the spleen are homogeneous with a smooth capsule, normal architecture and echotexture. A large, well-defined mass, which disrupts the integrity of the capsule of the spleen, is observed at the tail of the spleen. The mass measures 6.11 cm in length x 4.89 cm in diameter. Although it is relatively homogeneous, it does have areas of ill-defined hyperechoic regions, and occasional ill-defined hypoechoic nodules. Cavitary lesions are absent. The mass is very well vascularized. There is no evidence of a thrombus within the splenic vein.
<b>SPECIES</b>	
Canine	
<b>BREED</b>	<b>Liver</b>
Beagle	Subjectively the liver appears enlarged with rounded borders. It is diffusely hyperechoic and mildly to moderately heterogeneous with hypoechoic nodules of variable size, suggestive of nodular hyperplasia. The hepatomegaly and diffuse hyperechogenicity of the liver are suggestive of a vacuolar hepatopathy, which may occur due to hyperadrenocorticism, in this case an adrenal mass, as well as stress, due to a chronic illness. Other differential diagnoses such as cholangitis or hepatitis are considered less likely.
<b>SEX</b>	
Spayed Female	The gall bladder wall appears to be within normal limits in thickness and echogenicity. A very mild amount of echogenic material is present within the lumen of the gallbladder, both free-floating, and which has settled by gravity. There are no signs of an obstruction of the biliary system.
<b>AGE</b>	<b>Gastrointestinal</b>
11 Years	The stomach measures 0.20 cm. A small amount of liquid is present within its lumen. Peristalsis appears within normal limits. Accumulation of edema surrounding the stomach may be present later in the exam, based on the appearance of a progressively thickened mucosa, possibly secondary to portal hypertension.
<b>WEIGHT</b>	
35 Pounds	The small intestinal wall thickness is within normal limits and there is no evidence of dilation. The definition of the wall layers is preserved. The jejunum wall measures 0.38 cm. No abnormalities observed with the ileo-cecal-colic junction. The colonic wall is very mildly thickened at 0.24 cm, although there are no abnormalities with the definition of the wall layers. There are no obvious signs of a mass, foreign body, infiltrative disease or an obstruction.
<b>INTERPRETED BY</b>	<b>Pancreas</b>
Lisa Carioto, DVM, DVSc, Diplomate ACVIM	Both the left and right limbs of the pancreas have a coarse echotexture and are mildly heterogeneous. Mild speckling, without shadowing, is present within the left lobe of the pancreas, which may be due to mineralization. These changes are most likely due to nodular hyperplasia and areas of fibrosis, respectively. They are most likely age related changes, and possibly due to previous episodes of pancreatitis. There are no signs of active pancreatitis.
<b>IMAGING PERFORMED BY</b>	<b>Other</b>
Dr. Jennifer Todd	Lymph nodes: No abnormalities are observed.
<b>HOSPITAL NAME</b>	Abdominal effusion is not visualized.
Lambs Gap AH	A video clip of the heart was submitted. There is no evidence of pericardial or pleural effusion, nor pulmonary edema. There are no abnormalities noted with the right auricle. However, a mass effect is visualized within the right atrium. It measures 1.1 cm in length x 2.4 cm in height. It does not appear to be originating from the right atrial wall, and is most likely a thrombus rather than a mass, as echogenic contrast ("smoke") is also seen in certain angles of multiple images. Very, very mild myxomatous degeneration of the parietal leaflet of the tricuspid valve is also present. This is clinically insignificant.
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Dr. Laura Campbell	
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**PATIENT**

Molly Hoachlander

**SPECIES**

Canine

**BREED**

Beagle

**SEX**

Spayed Female

**AGE**

11 Years

**WEIGHT**

35 Pounds

**INTERPRETED BY**

Lisa Carioto, DVM,  
DVSc, Diplomate  
ACVIM

**IMAGING PERFORMED BY**

Dr. Jennifer Todd

**HOSPITAL NAME**

Lambs Gap AH

**REFERRING VET**

Dr. Laura Campbell

**ULTRASONOGRAPHIC FINDINGS**

- Right adrenal mass with invasion of the phrenicoabdominal vein and caudal vena cava, as well as a possible thrombus within the caudal vena. Partial occlusion of blood flow is evident, causing portal hypertension based on the size of the portal vein. Differential diagnoses include an adenocarcinoma or pheochromocytoma with metastases to the surrounding vasculature.
- The hepatic changes are considered secondary to the adrenal mass (i.e., hepatomegaly and vacuolar hepatopathy). Nodular hyperplasia, a benign age related change, is also suspected based on the appearance of the hypoechoic nodules. There are no obvious signs of hepatic metastases.
- A urinary tract infection is strongly suspected, in addition to glomerulonephritis or interstitial nephritis. Pyelonephritis cannot be excluded, despite the absence of overt sonographic signs. Age-related degeneration of the kidneys are likely contributing to the renal changes observed.
- The splenic mass at the tail of the spleen is well vascularized, but not cavitory, i.e., its appearance is not consistent with hemangiosarcoma. Its appearance is not typical of a sarcoma either. The mass is in close proximity to the liver, but based on the vasculature, it appears to be originating from the spleen. Extramedullary hematopoiesis or a hematoma that is becoming organized cannot be excluded.

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

A urine culture and sensitivity is recommended. If it is negative, a urine protein/creatinine ratio is strongly suggested. A fundic exam is also recommended due to the increased blood flow to both kidneys and Molly's mild hypertension. A re-evaluation of her blood pressure is also recommended, ideally in the presence of the client to minimize the effects of stress.

Although some of the changes observed with the kidneys may be age related, there is a high index of suspicion for glomerulonephritis or interstitial nephritis due to Cushing's disease.

A fine needle aspirate of the spleen using colour Doppler as guidance during the procedure would be required to achieve a definitive diagnosis. However, the risk/benefit ratio of performing this procedure is considered quite high when considering the right adrenal mass with metastases and thrombi within the caudal vena cava, as well as the thrombus within the right atrium.

Rivaroxaban (Xarelto) and clopidogrel are recommended to help decrease the risk of further thrombotic events. However, they should not be started prior to performing a fine needle aspirate of the spleen, if pursued. A coagulation profile is also recommended prior to performing a splenic aspirate.

Molly is an extremely complicated patient, and although some treatment recommendations have been described, an internal medicine consult is suggested in order to describe all possible options in further detail.

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**PATIENT**

Molly Hoachlander

**SPECIES**

Canine

**BREED**

Beagle

**SEX**

Spayed Female

**AGE**

11 Years

**WEIGHT**

35 Pounds

**INTERPRETED BY**

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**IMAGING PERFORMED BY**

Dr. Jennifer Todd

**HOSPITAL NAME**

Lambs Gap AH

**REFERRING VET**

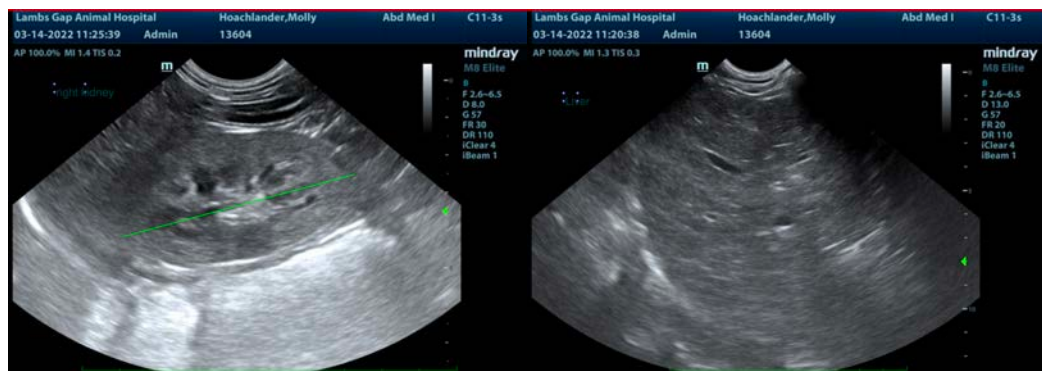
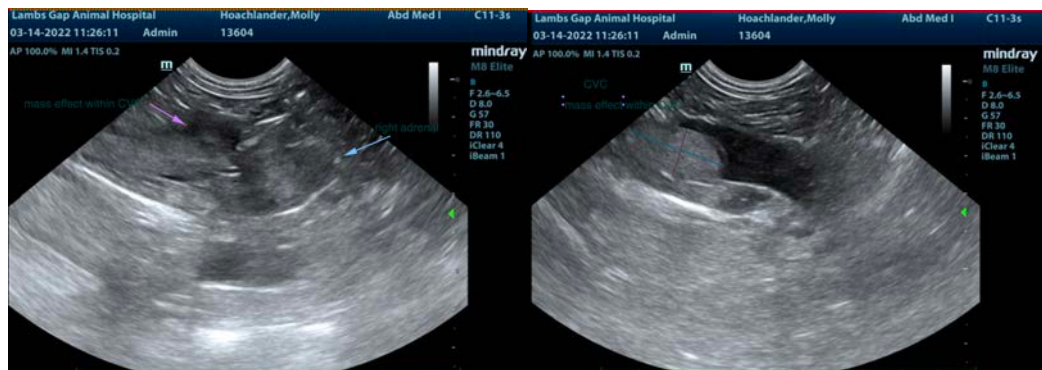
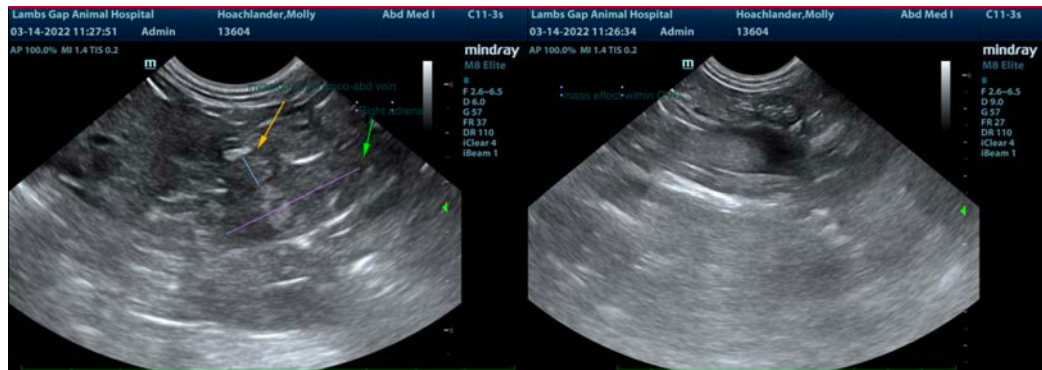
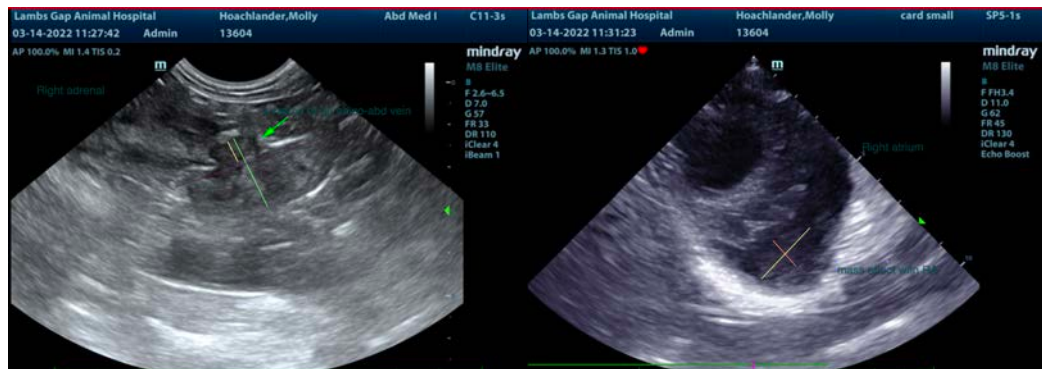
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**PATIENT**

Molly Hoachlander

**SPECIES**

Canine

**BREED**

Beagle

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Spayed Female

**AGE**

11 Years

**WEIGHT**

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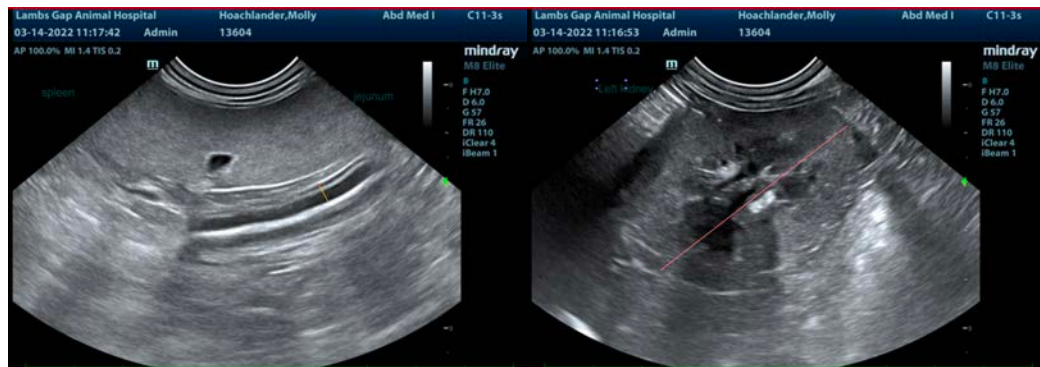
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**PATIENT**

Molly Hoachlander

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.

**Lisa Carioto, DVM, DVSc, Diplomate ACVIM**

[Lisa.Carioto@sonopath.com](mailto:Lisa.Carioto@sonopath.com)

**BREED**

Beagle

**SEX**

Spayed Female

**AGE**

11 Years

**WEIGHT**

35 Pounds

**INTERPRETED BY**

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