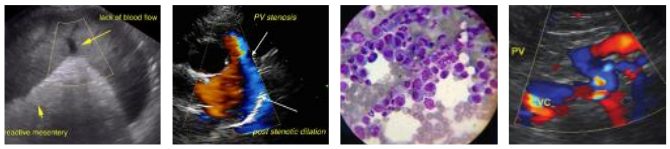

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PATIENT

Emily Gilkey

SPECIES

Canine

BREED

Queensland Heeler X

SEX

Spayed Female

AGE

8 Years 11 Months

WEIGHT

85 Pounds

INTERPRETED BY

Kathleen Sennello DVM, MS, Diplomate ACVIM (Small Animal Internal Medicine)

IMAGING PERFORMED BY

Carissa Rhoades

HOSPITAL NAME

Elizabeth AH

REFERRING VET

Dr. Leon Anderson

INVOICE

37387

DATE

5/4/22

PRESENTING CLINICAL SIGNS

Emily has been acting fine. NSAID panel checked regularly due to chronic carprofen therapy. Due to an upward trend in liver enzymes all medications were stopped 3/16/22. 6 week recheck show values continuing to rise.
Abnormal PE/Chem/CBC/UA Results: PE: Overweight, sclerosis normal for age, OA right stifle, meibomian adenoma right upper eyelid, long nails. Panel 12/2021 was good. NSAID 4/27/22: ALT: 469 U/L, AST 111 U/L, ALP 551 U/L Bile Acids Today: Pre-_2.3 umol/L FNA of liver pending.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is moderately distended with anechoic urine. The Bladder wall, trigone, ureteral papillae and visible urethra (to a depth of 2cm) appear normal with no evidence of wall thickening, mucosal irregularities, masses or cystic calculi.

The left kidney has a normal shape and size (6.45 cm). Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size. Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

Adrenal Glands

The left adrenal gland is large in size measuring 3.6 cm at the cranial pole, 1.16 cm at the caudal pole, and 5.26 cm in length. It is located roughly in its normal position cranial to the left renal artery. It is abnormal in appearance in that it is very large and somewhat ovoid in shape. Additionally, there is concern for possible vascular invasion towards the caudal pole of the adrenal. Findings are concerning for a left adrenal mass.

The right adrenal gland is normal in size measuring 0.78 cm at the caudal pole. It is observed in its normal position between the cranial aspect of the right kidney and the caudal vena cava. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

Spleen

The spleen is subjectively normal in size, echotexture is homogenous, and the splenic capsule is smooth with no irregularities. The blood flow through the hilus and splenic parenchyma appears normal. No focal parenchymal abnormalities are visualized.

Liver

The liver is subjectively normal in size, and echogenicity with smooth peripheral margins. The parenchyma is heterogenous in echotexture with subtle, indistinct focal mottling. The visible portions of the vasculature and biliary tract appear normal. There is a 2.18 cm hyperechoic nodule visualized within the hepatic parenchyma. As well, there is a hypoechoic, likely cystic structure towards the diaphragmatic surface, measuring 1.01 cm in diameter.

The gall bladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. There is a moderate amount of non-organized echogenic debris. The cystic and common bile ducts are normal/not visible.

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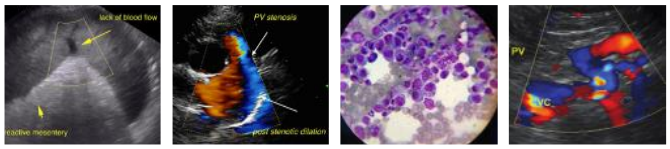

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Gastrointestinal

The stomach contains minimal luminal contents. It measures at a normal thickness of <0.7cm with some variability due to the presence of rugal folds. The distinction of the gastric wall layers is adequate and there is no impression of reduced peristaltic activity. No masses or focal lesions were observed.

The visualized areas of duodenum, jejunum and ileum have a relatively uniform diameter with minimal fluid distension. Wall thickness is normal. Bowel loops follow a curvilinear path with distinct wall layering maintaining the typical 1:3 muscularis:mucosa layer ratio. The duodenum measured as normal (between 0.3-0.5cm in wall thickness) and the jejunum measured as normal (between 0.2-0.47cm.) Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

The ileocecal junction was visualized and exhibited normal intact wall layering and is subjectively of normal thickness. Sections of colon are visualized with formed fecal material and gas shadowing distally. There is no observed focal or generalized colon wall thickening or loss of layering.

Pancreas

The pancreas is normal and isoechoic to surrounding mesentery. There is no evidence of nodules or cystic lesions. There is no evidence of regional mesenteric inflammation or fluid.

Free Abdomen

Evaluation of the peritoneal cavity did not reveal any evidence of effusion, or subjective lymphadenomegaly. The Medial iliac nodes appear normal and there was no evidence of a caudal aortic thrombus at the bifurcation. The omentum is of normal uniform echogenicity.

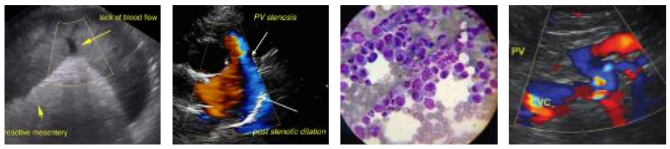
ULTRASONOGRAPHIC FINDINGS

- Large mass effect in the area of the left adrenal gland – Left adrenomegaly could be consistent with neoplasia (e.g., adenoma, carcinoma, pheochromocytoma), hyperplasia, inflammation, other. There is concern for possible early vascular invasion near the caudal pole of the adrenal gland.
- Heterogeneous liver with small hyperechoic nodule and smaller hypoechoic cystic lesion – The diffuse hepatic changes are non-specific and could be consistent with vacuolar hepatopathy, nodular hyperplasia, inflammatory/immune-mediated disease, fibrosis, extramedullary hematopoiesis, toxic hepatopathy (e.g., copper), infiltrative neoplasia (less likely) or other hepatopathy.
- Moderate gallbladder debris – The significance of the aggregated gallbladder sludge is unclear. This could represent an early mucocele, cholestasis, or may be secondary to fasting.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The lesions visualized in the liver are small and have the general appearance of a more benign process, although an underlying neoplastic process cannot be ruled out. Your plan for a liver function test and fine needle aspirate is very appropriate. You could also consider Leptospirosis testing and a liver biopsy if cytology is not helpful and liver enzymes continue to elevate, and liver function is abnormal.

There is a mass effect in the region of the left adrenal gland. Towards the caudal pole, there is the suspicion of early vascular invasion. These are my recommendations for further evaluation of an adrenal mass.



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- If signs of cushings are present, consider adrenal function testing. I prefer an ACTH stimulation test combined with an adrenal panel to the University of Tennessee's endocrine lab to look for atypical adrenal hormones as well as cortisol. (other testing can suffice)
- If adrenal dependent cushings is suspected and supported by adrenal function testing consider medical therapy with lysodren or trilostane and/or consider surgical removal (recommend referral to a board certified veterinary surgeon and possible pre op CT)-This can be a challenging surgery with significant risk for complication
- Recommend blood pressure evaluation-if hypertensive consider testing catecholamine levels for a possible pheochromocytoma
- Due to the invasive nature of these masses a CT scan is recommended to evaluate for metastasis and vascular invasion.
- If no symptoms of cushings are present, consider either referral for surgery or if surgery is not an option consultation with a veterinary oncologist regarding chemotherapeutic options and continued monitoring with ultrasound (in 4-6 weeks) can be considered.
- Some aggressive adrenal tumors can grow quickly and there is risk for acute hemorrhage from vascular invasion.

Despite the concerns for vascular invasion, I feel this pet is a good candidate for possible adrenalectomy, provided the CT scan does not show evidence of extensive metastasis/invasion.

Consider three view thoracic radiographs to rule out concurrent thoracic disease/involvement.

If surgery is pursued, recommend a liver biopsy at the time of surgery (histopathology, culture and copper levels).

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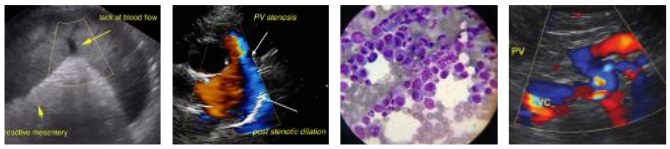

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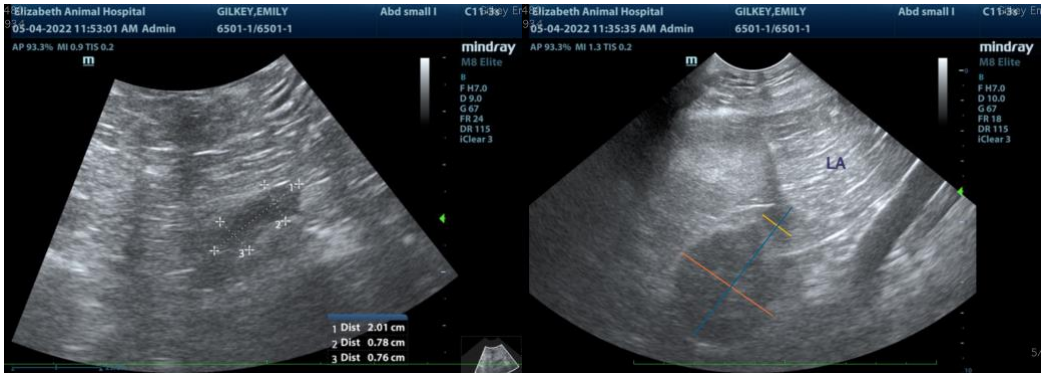

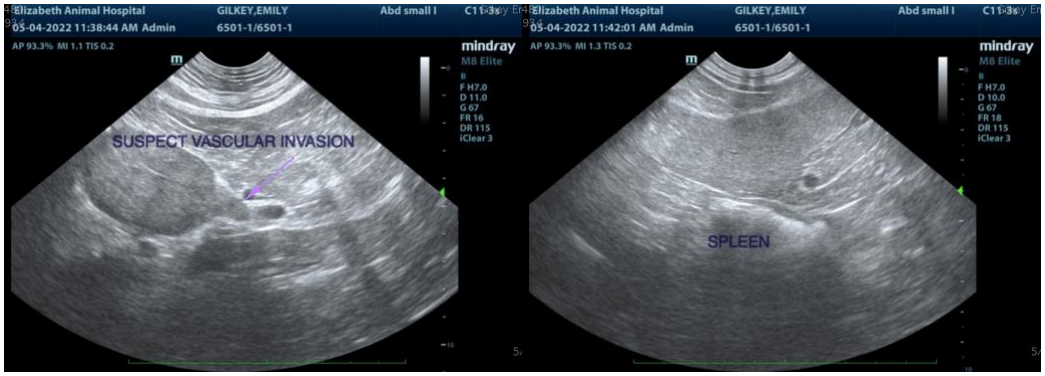

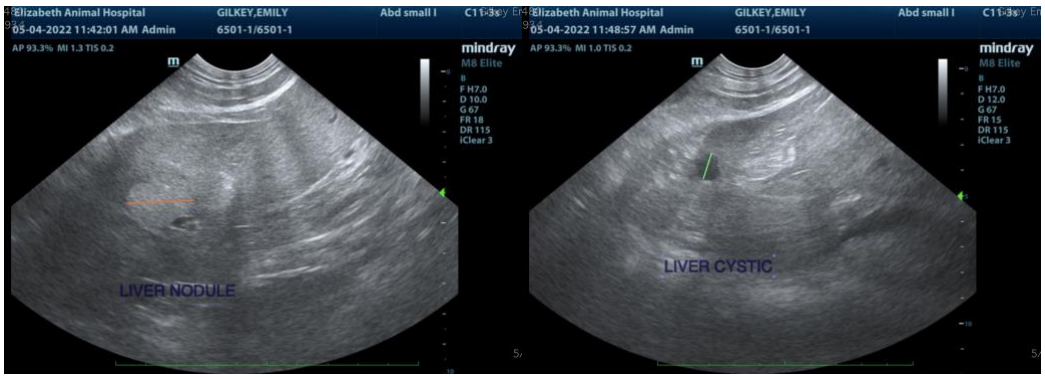

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Kathleen Sennello DVM,MS, Diplomate ACVIM (Small animal Internal Medicine)

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