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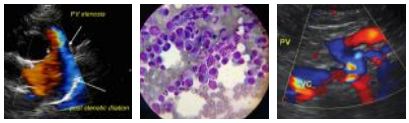

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DATE

12/28/21

PATIENT

Shotgun Funk

SPECIES

Canine

BREED

Labrador Retriever Mix

SEX

Neutered Male

AGE

11/23/12

WEIGHT

75.9 Lbs.

INTERPRETED BY

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

IMAGING PERFORMED BY

Rachel Brilhart RDMS

HOSPITAL NAME

Festival VC

REFERRING VET

Dr. Cianelli

INVOICE

13199

PRESENTING CLINICAL SIGNS

History: 9-year-old male neutered pu/pd elevated liver values. inconclusive LDDST; rule out adrenal/pyelo/liver.

Lab Results: Attached separately. Elevated LFTs, inconclusive LDDST.
Date of Previous IntraPet Ultrasound: No previous IntraPet scans.
Sedation: Not required to complete full diagnostic ultrasound.
Stat Report: Not requested.

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 2 cm) appear normal with no evidence of wall thickening, mucosal irregularities, masses or cystic calculi.

The visualized areas of prostate and surrounding tissue appear normal. Unfortunately, the prostate is not fully visualized likely due to its intrapelvic location. Correlate with rectal exam findings.

The left kidney has a normal shape and size (7.5 cm). Overall echogenicity is slightly hyperechoic with poor corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of perinephric inflammation or effusion. A cortical cyst was noted, measuring 1.23 cm. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (7.04 cm). Overall echogenicity is slightly hyperechoic with poor 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 borderline enlarged measuring 1 cm at the cranial pole, 0.78 cm at the caudal pole and 1.21 cm in length. It is located in its normal position cranial to the left renal artery. It is somewhat irregular in appearance, in that there is an ill-defined hyperechoic nodule/mottling in the cranial pole, measuring 1.17 cm x 1.04 cm.

The right adrenal gland is normal/borderline large in size measuring 1 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 an ill-defined mixed echogenicity hyperechoic mass effect measured on the right side of the liver at 7.92 cm x 6.07 cm.

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.

Gastrointestinal

The stomach contains minimal luminal contents. It measures at a normal thickness of <0.7 cm 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 0.3-0.5 cm in wall thickness) and the jejunum measured as normal (between 0.2-0.47 cm.) 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/region of 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

Primary Findings

- Bilateral adrenomegaly with an ill-defined hyperechoic nodule in the cranial pole of the left adrenal gland. The bilateral adrenomegaly could be consistent with bilateral hyperplasia (e.g., secondary to pituitary-dependent hyperadrenocorticism), bilateral infiltrative neoplasia, inflammatory adrenal disease, other. Correlation with clinical findings is recommended. Differentials for the left sided irregularity are hyperplasia, benign nodule, adenoma, carcinoma or pheochromocytoma. This lesion does not deform the adrenal gland.

- Heterogeneous liver with ill-defined mass effect. Findings are suggestive of a primary liver mass. This could be benign, including an adenoma, large regenerative nodule, etc., or could be a neoplastic lesion.

Secondary Findings

- Decreased corticomedullary distinction in both kidneys with a left sided cortical cyst. The bilateral renal findings are consistent with age-related change.

- Moderate gallbladder debris. The significance of the aggregated gallbladder debris is unclear. This could represent an early mucocele, cholestasis, or may be secondary to fasting.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

There are multiple reasons visualized for possible elevation in liver enzymes and PU/PD.

There is an ill-defined hyperechoic mass effect visualized. I would consider advanced imaging (contrast CT scan) to further evaluate this mass for likely surgical resection. Many of these liver masses can have a very favorable prognosis if surgically removed. Additionally, the left adrenal gland can be evaluated at the time of CT as well.

- Consider pre- and postprandial bile acids

- Consider leptospirosis testing, if this is of concern as a differential for PU/PD

There is a nodule present on the left adrenal gland. This nodule is relatively small and is not deforming the adrenal gland significantly and doesn't appear to have any evidence of vascular invasion. These nodules can be benign or malignant and can secrete hormones or be non-active. Options moving forward include:

- 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 or consider surgical removal (recommend referral to a board-certified veterinary surgeon and possible pre op CT)

- Recommend blood pressure evaluation-if hypertensive consider testing catecholamine levels for a possible pheochromocytoma

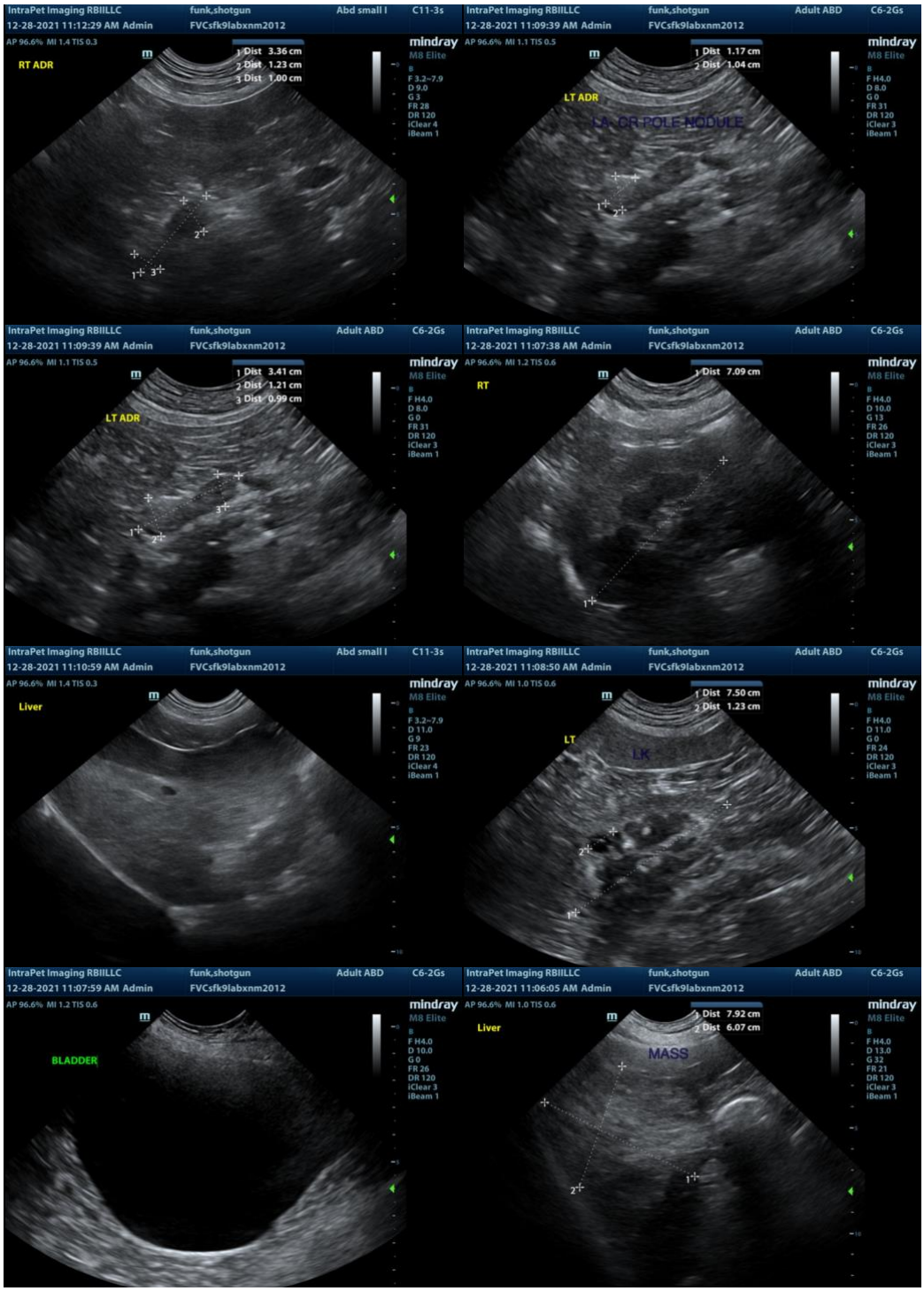
- If no symptoms of cushings are present, consider either referral for surgery or continued monitoring with ultrasound (in 3-4 months).

- Many of these nodules can be benign and incidental in nature, unfortunately that is difficult to determine with a single ultrasound.

In general, with an active adrenal nodule, you would expect compensatory atrophy in the contralateral adrenal gland. This is not present, so my suspicion is that this dog could have an atypical pituitary dependent hyperadrenocorticism. The adrenal panel may be helpful in this situation, to help determine if cortisol or other hormone accesses are present.

I recommend three-view thoracic radiographs, urinalysis and culture.

The prognosis in this individual could be favorable if the liver mass is benign or surgically resected and pituitary dependent cushings is diagnosed.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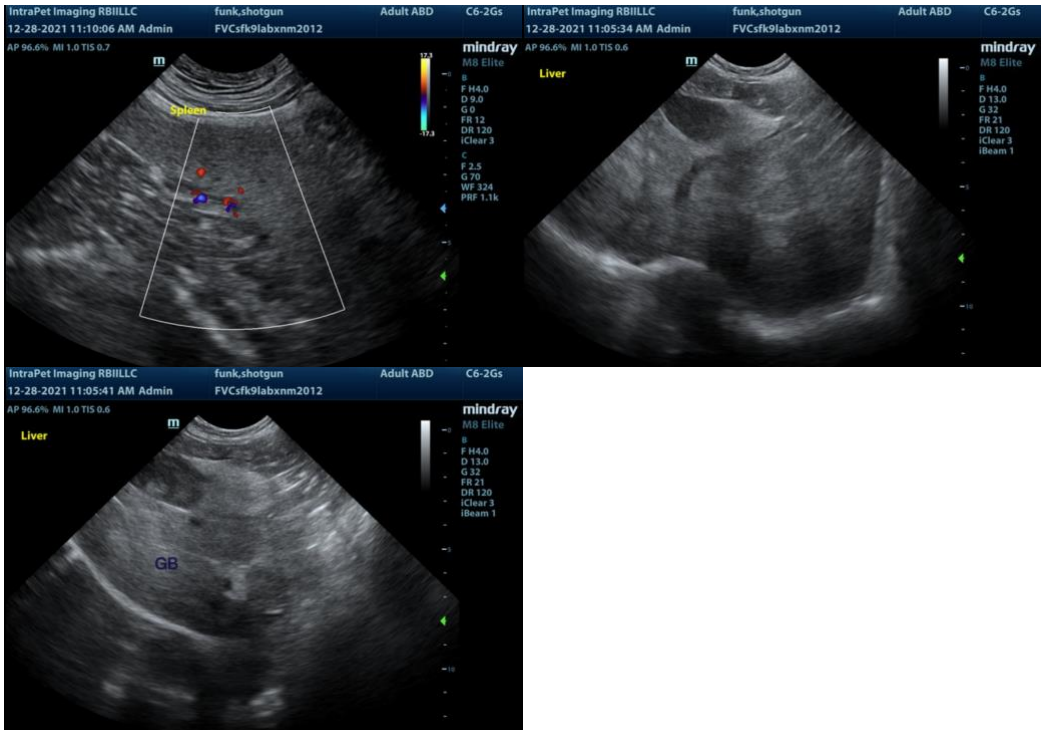

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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