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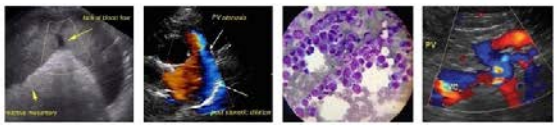


THE FOCAL ZONE
IMAGING PERFORMED BY
289-808-2608 info@thefocalzone.com

PATIENT

Remy McKibbon

SPECIES

Canine

BREED

Yorkie

SEX

Neutered Male

AGE

9 Years

WEIGHT

3.8 kg

INTERPRETED BY

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

IMAGING PERFORMED BY

Kelly Reschny

HOSPITAL NAME

Headon Forest AH

REFERRING VET

Dr. Hall

INVOICE

33707

DATE

12/23/21

PRESENTING CLINICAL SIGNS

Suspect protein losing nephropathy
Abnormal PE/Chem/CBC/UA Results: CBC/Chem Findings: CBC reveals mild decrease in MCV, MCH, likely lab error due to lipemia. alb-mild decrease, rest of biochem WNL Urinalysis Findings: Urine-highly concentrated, quiet sediment, 4+ protein-suspect PLN-rec adding UPCR

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 prostate is normal in size (0.65 cm) and shape for this neutered male dog. The parenchyma is homogenous and the external margins are smooth. The prostatic urethra appears normal with no evidence of irregularity, invasion, mass effect or calculi.

The right kidney has a normal shape and size (3.86 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 left kidney has a normal shape and size (3.88 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.

Adrenal Glands

The left adrenal gland is normal in size measuring 0.48 cm. It is observed in its normal position cranial to the left renal artery. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

The right adrenal gland is large in size measuring 1.29 cm at the cranial pole, 1.0 cm at the caudal pole, and 1.99 cm in length. 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.

Spleen

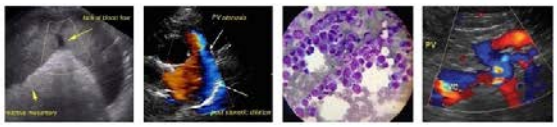
The spleen echotexture is homogenous, and the splenic capsule is smooth with no irregularities. The spleen is subjectively normal in size with no focal parenchymal abnormalities. The blood flow through the hilus and splenic parenchyma appears normal.

Liver

The liver is subjectively normal in size, and echogenicity with smooth peripheral margins. The parenchyma is homogenous echotexture. The visible portions of the vasculature and biliary tract appear normal. No focal nodules or cystic lesions are observed.

The gall bladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. Luminal contents are primarily anechoic. The cystic and common bile ducts are normal/not visible.

Gastrointestinal



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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. Duodenum wall measured 0.35 cm. Jejunum wall measured 0.27 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 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. There is no lymphadenomegaly present. 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 right adrenal gland – Right adrenomegaly could be consistent with neoplasia (e.g., adenoma, carcinoma, pheochromocytoma), hyperplasia, inflammation, other.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The ultrasound findings on today's exam were relatively mild. The most significant abnormality was an enlarged right adrenal gland. It does not appear severely irregular in shape. The left adrenal gland was more difficult to visualize, but appeared approximately half the size of the right. Enlarged adrenal glands can represent benign or malignant change and can secrete hormones or be non-active. Possible differentials include benign hyperplasia, adenoma, carcinoma, pheochromocytoma, other. 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 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
- If no symptoms of cushings are present, your options are to either continue to monitor with ultrasound or to consider advanced imaging of both adrenal glands to confirm the size and decide if surgical options are to be considered. Keep in mind that some adrenal tumors can grow rapidly, so recheck ultrasound in 4-6 weeks would be recommended.
- Some aggressive adrenal tumors can grow quickly and there is risk for acute hemorrhage from vascular invasion.

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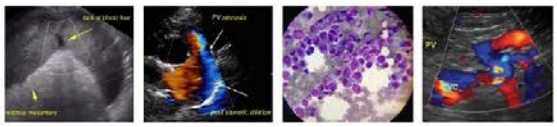

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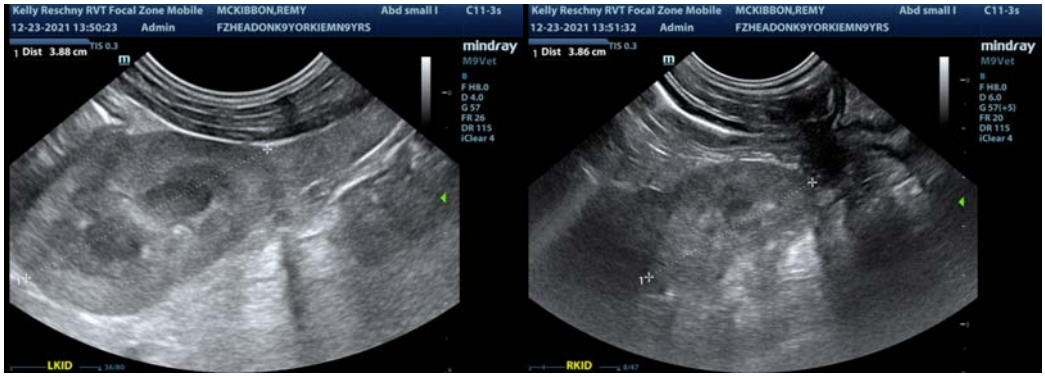
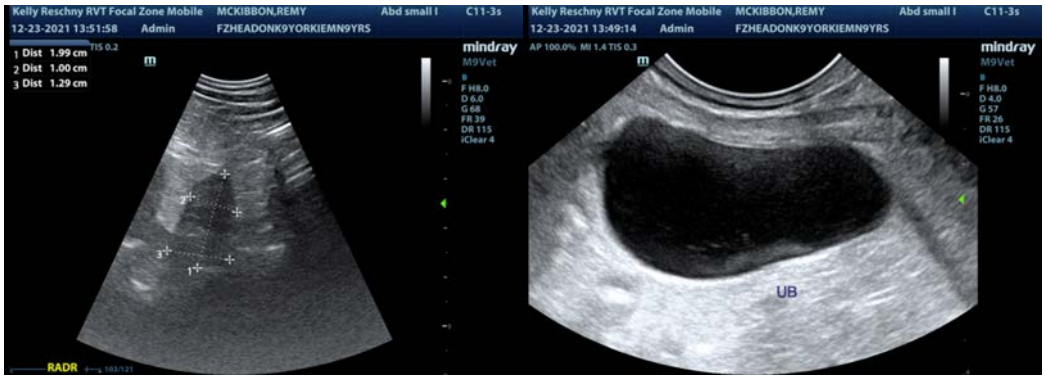
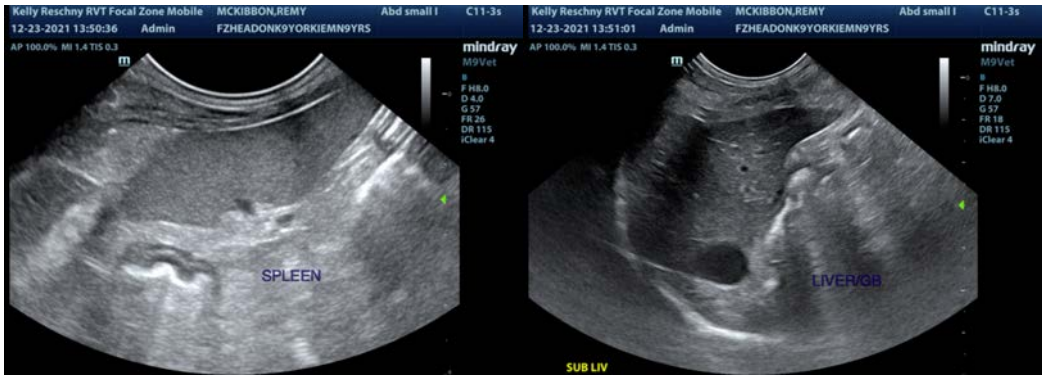
The intended evaluation for this scan was for hypoalbuminemia. This most commonly comes from either protein losing nephropathy, enteropathy, or liver failure. Despite your suspicions regarding renal protein loss, I would still consider all 3, as sometimes there is more than one source for protein loss, and Yorkies have a predilection for lymphangiectasia, shunts, etc.

- Recommend pre- and post-prandial bile acids.
- Consider urine protein/creatinine ratio, urinalysis and urine culture.
- Recommend a GI panel to Texas A&M for a qualitative PLI, TLI, cobalamin and folate to look for additional evidence of possible small intestinal disease.
- Recommend blood pressure evaluation, as pets with adrenal disease can be hypertensive, which can exacerbate renal protein loss.
- Recommend 3-view thoracic radiographs to evaluate for concurrent intrathoracic disease.







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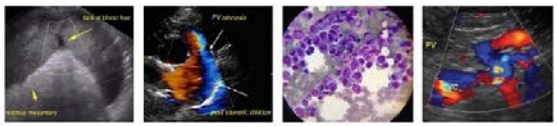

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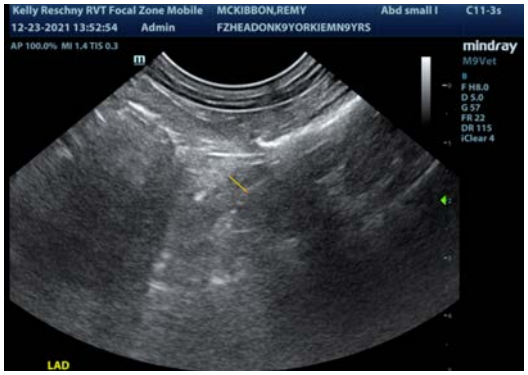

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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