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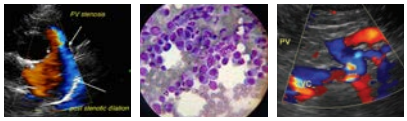

SonoPath
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DATE

6/10/22

PATIENT

Loki Knott

SPECIES

Canine

BREED

Labrador Retriever

SEX

Spayed Female

AGE

9/9/09

WEIGHT

67 Pounds

INTERPRETED BY

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

IMAGING PERFORMED BY

Stephanie Pearce RDCS, RVT

HOSPITAL NAME

Friendly Paws VC

REFERRING VET

Dr. Price

INVOICE

38664

PRESENTING CLINICAL SIGNS

Pet presented with inappropriate elimination, episodes of hematuria, frequency and stranguria over the last week, but potentially over the last 3 months
PE: BCS 7.0/9. BAR, dental wear, tucked up vulva, hematuria, frequency and stranguria observed.

Current Medications: starting Doxycycline tomorrow after culture collected Starting UT strenght nutritional supplement
Starting Carprofen.
Lab Results: USG 1.030, 1+ hemolyzed blood, 3+ protein, pH 7.5, Micro: TNTC RBC, TNTC WBC, possible dead metaplastic cells (live dead stain). No crystals, no bacteria seen. No other lab work at this time.
Date of Previous IntraPet Ultrasound: No previous.
Sedation: Tiletamine / Zolazepam 0.6cc, Butorphanol 1.22cc, Midazolam 1.22cc IV.
Stat Report: Not requested.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is significantly distended with anechoic urine. The Bladder wall appears normal with no evidence of thickening or mass lesions. The area of the trigone and ureteral papillae appear normal, but in the proximal urethra there is evidence of soft tissue within the lumen of the urethra extending distally beyond the point of visualization. The proximal urethra has a width of 1.0 cm and appears approximately 2/3 filled with soft tissue density (possibly more so distally). This lesion extends for >5.2 cm. Concern is high for a urethral mass lesion +/- clot.

The left kidney has a normal shape and size (6.47 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.

The right kidney has a normal shape and size (6.27 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 large in size measuring 3.18 cm at the cranial pole, 0.75 cm at the caudal pole, and 3.18 cm in length. It is observed in its normal position cranial to the left renal artery. It is abnormal in appearance in that the cranial pole is hyperechoic, rounded and very enlarged, creating the effect of a large nodule on the cranial pole. There is no obvious evidence of vascular invasion.

The right adrenal gland is normal in size measuring 1.62 cm at the cranial pole, 0.76 cm at the caudal pole, and 2.76 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 somewhat abnormal in appearance in that there are hyperechoic foci visualized within the cranial pole. The largest of these measure at 0.55 cm. These lesions do not appear to deviate the shape of the adrenal gland. There appears no abnormalities associated with local vasculature.

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. It is folded upon itself.

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 gallbladder 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
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. Jejunum wall measured 0.26 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, 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.

PRIMARY FINDINGS

- Distended urinary bladder with soft tissue mass effect visualized within the urethra – concern is high for a neoplastic lesion. Granuloma, urethritis or a clot are other possibilities.

- Hyperechoic mass effect in the cranial pole of the left adrenal gland – Left adrenomegaly could be consistent with neoplasia (e.g., adenoma, carcinoma, pheochromocytoma), hyperplasia, inflammation, other.

- Pinpoint hyperechoic foci in the cranial pole of the right adrenal gland – The significance of these lesions is unclear. They could represent early neoplastic lesions or small incidental benign nodules.

SECONDARY FINDINGS

- Decreased corticomedullary distinction in both kidneys – The bilateral renal findings are consistent with age-related change.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

There is a large soft tissue structure visualized within the lumen of the urethra. This appears to start distal to

the urinary bladder, approximately 2.0 cm, and extends beyond the visualization of the ultrasound. Correlate these findings with a digital rectal exam, as the urethra will likely feel thickened and firm. This mass lesion appears to be causing a partial obstruction and there is concern for complete obstruction in the near future, as the urinary bladder is large.

- Consider a catheterization of the distal urethra. I suspect if a sample of urine is obtained from this location with a urinary catheter and submitted for cytology, you would have a good chance of identifying abnormal cells.

- Recommend urinalysis and culture on this urine sample.

- Alternately, a urine BRAF test could be considered on a free catch sample. This is not a definitive test, but appositive test would greatly increase the likelihood that this is a neoplastic lesion. A negative test is non-diagnostic and alternative testing would be required.

- While waiting on test results and diagnostics, consider starting Piroxicam and Misoprostol or an alternate nonsteroidal to try and reduce inflammation and the degree of obstruction. If a diagnosis can be obtained, recommend consultation with a veterinary oncologist regarding prognosis and treatment options (stents, chemotherapy, urethrostomy tube, etc.). Additionally, rarely, conditions such as granulomatous urethritis, large clots, etc. can resemble a mass lesion, so a cytologic or histopathologic diagnosis is strongly recommended.

There is a large mass effect on the cranial pole of the left adrenal gland. This could represent a benign or neoplastic lesion, and it could be actively secreting hormone or be nonactive. Options for further evaluation 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

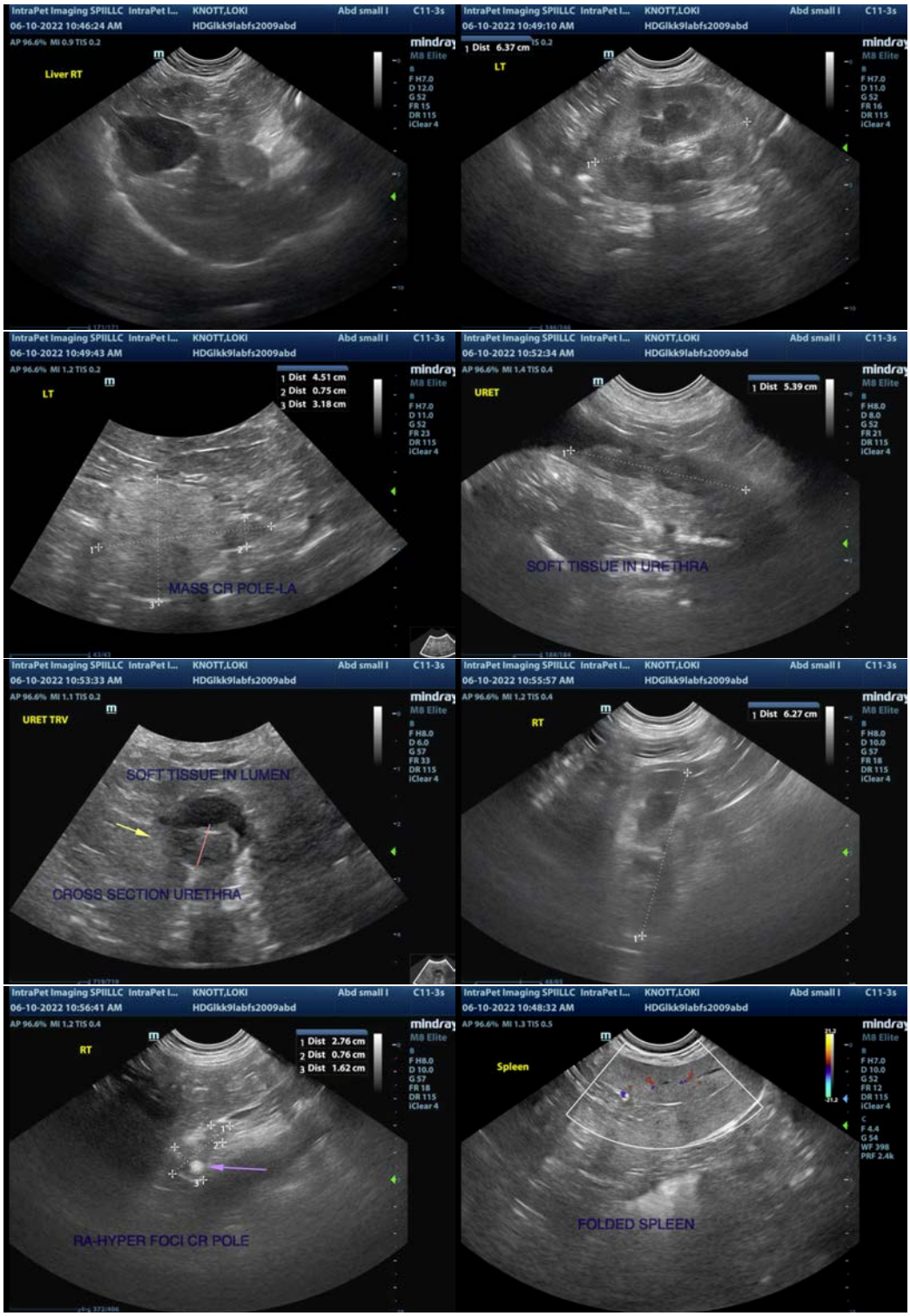
- Due to the invasive nature of these masses a CT scan is recommended to evaluate for metastasis and vascular invasion.

- 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.

Additionally, there are hyperechoic foci in the cranial pole of the right adrenal gland. The significance of this is unclear. These could represent metastatic lesions, early mass lesions, or be incidental hyperplastic nodules. Workup for the left adrenal lesion will also somewhat evaluate this lesion, but only contrast CT scan or surgical removal would provide significant additional information at this time. Additionally, you could consider continued monitoring with ultrasound for the enlargement of these nodules, which would cause

increased concern.



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.

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