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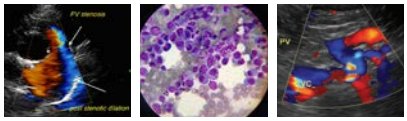

SonoPath
Clinical Sonography & Telecytology
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DATE

8/10/22

PATIENT

Nanook Montour

SPECIES

Canine

BREED

Husky

SEX

Neutered Male

AGE

3/14/13

WEIGHT

100 Pounds

INTERPRETED BY

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

IMAGING PERFORMED BY

Stephanie Warga RDCS, RVT

HOSPITAL NAME

Harborside Mobile VC

REFERRING VET

Dr. Hawkins

INVOICE

40297

PRESENTING CLINICAL SIGNS

HX: anal gland adenocarcinoma removed by the board certified surgeons about one year ago. Complaint: pu/pd, not eating, walking funny
PE: painful in caudal abdomen

Current Medications: 2 liters 0.9% sodium chloride IV on 08/02. Dog started eating that evening. Owner giving500 mL 0.9% sodium chloride BID starting 8/3. Pamidronate: 70 mg given IV on 08/05
Lab Results: hypercalcemia.
Date of Previous IntraPet Ultrasound: No previous.
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 2cm) appear normal with no evidence of wall thickening, mucosal irregularities, masses or cystic calculi.

The prostate is normal in size (1.26 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 left kidney has a normal shape and size (8.45 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 (8.47 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 large in size measuring 1.09 cm at the cranial pole, 3.03 cm at the caudal pole, and 4.86 cm in length. It is observed in its normal position cranial to the left renal artery. It is somewhat abnormal in appearance in that it is enlarged and that the caudal pole is of mixed echogenicity and is irregular. Findings are most consistent with a left adrenal mass effect. There is no obvious evidence of vascular invasion visualized.

The right adrenal gland is normal in size measuring 0.47 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. The spleen appears somewhat folded in some views.

Liver
The liver is subjectively normal in size, and echogenicity with smooth peripheral margins. The parenchyma is mildly heterogenous in echotexture with subtle, indistinct focal mottling. 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, but it is somewhat hyperechoic and prominent and has a smooth mucosal surface. Luminal contents are primarily anechoic, but there are occasional hyperechoic pinpoint structures as well as an accumulation of hyperechoic shadowing material within the gallbladder neck. These changes are most consistent with small gallbladder stones or mineralized/sandy 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 <0.7cm 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, irregular, heterogeneous caudal pole of the left adrenal gland – Left adrenomegaly could be consistent with neoplasia (e.g., adenoma, carcinoma, pheochromocytoma), hyperplasia, inflammation, other.

- Mildly heterogeneous liver – 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.

- Hyperechoic shadowing debris in the gallbladder neck – most consistent with stones/mineralized debris. Continued monitoring is warranted, but this is likely an incidental finding at this time.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

There is no obvious intrapelvic mass or caudal lymphadenopathy to explain the hypercalcemia and the difficulty walking described. Careful palpation of the anal gland areas is warranted to determine if there is

any evidence of local regrowth. If there is scar tissue, etc., consider a fine needle aspirate of the region.

The caudal pole of the left adrenal gland is enlarged and irregular, most consistent with a left adrenal mass. I do not see any evidence of clear invasion, but this is still possible. These masses can be benign or malignant and can secrete hormones or be nonactive. 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

- 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.

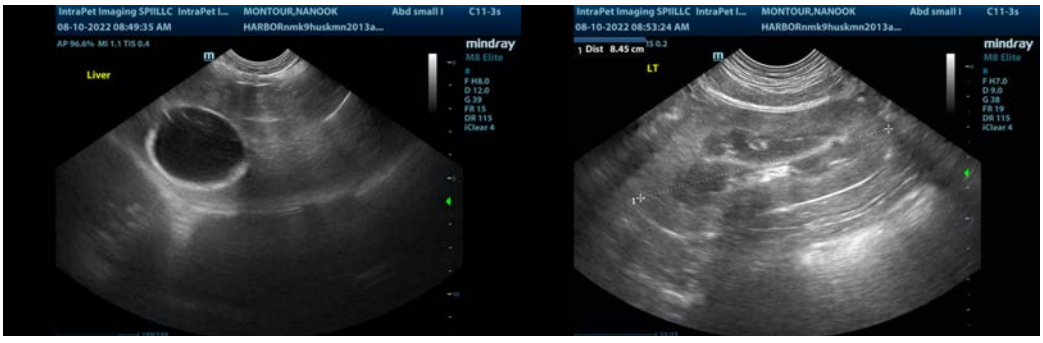
- Some aggressive adrenal tumors can grow quickly and there is risk for acute hemorrhage from vascular invasion.

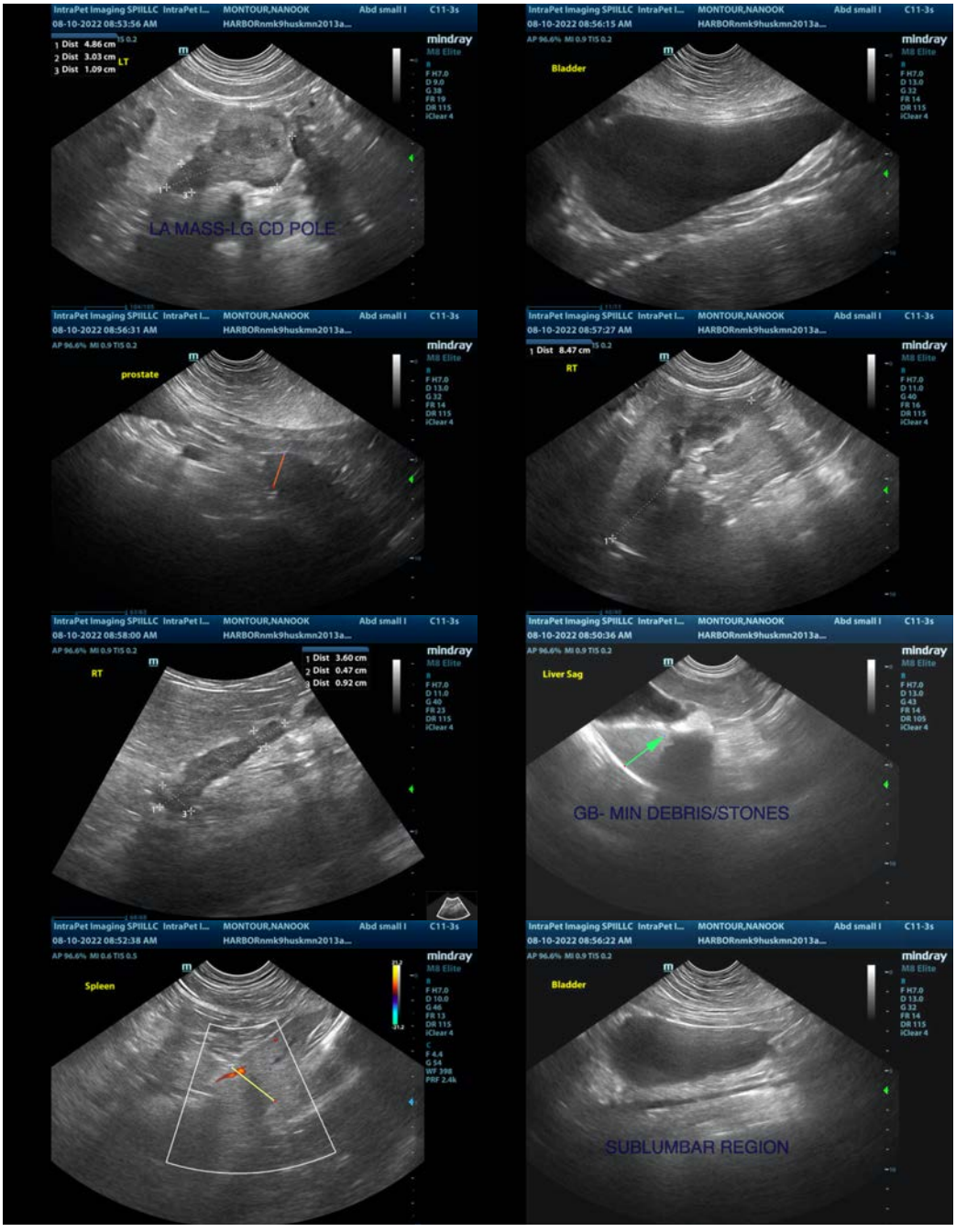
Consider three view thoracic radiographs to rule out concurrent thoracic disease/involvement.

It is possible that the hypercalcemia reported is secondary to the adrenal mass, although I am very concerned about the possibility of recurrence of the previous anal gland mass. Additionally, I would consider an ionized calcium, PTH, and PTHrP level in the odd chance that there is concurrent hyperparathyroidism present. If surgical intervention is planned for this adrenal mass, I would strongly recommend an abdominal CT scan to get better detail in the intrapelvic area and look for evidence of metastatic disease.

Additionally, I would recommend radiographs evaluating the spine and any focal areas of pain in search for osteolytic or metastatic bony lesions.

Consider consultation with an oncologist regarding a treatment plan as this degree of hypercalcemia will need prompt intervention/treatment.

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2 Dist 3.03 cm
3 Dist 1.09 cm
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LA MASS-LG CD POLE
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Bladder
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Bladder
SUBLUMBAR REGION
mindray

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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