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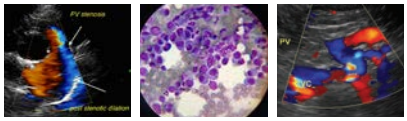

SonoPath

Clinical Sonography & Telecytology

EDUCATIONAL TELECONSULTATION SERVICES™

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DATE

9/1/22

PATIENT

Cuby Seo

SPECIES

Canine

BREED

Toy Poodle

SEX

Intact Male

AGE

7/24/06

WEIGHT

10.6 Pounds

INTERPRETED BY

Beth Johnson, DVM DACVIM

IMAGING PERFORMED BY

Rachel Brilhart RDMS

HOSPITAL NAME

Banfield Columbia

REFERRING VET

Dr. Scherping

INVOICE

40952

PRESENTING CLINICAL SIGNS

Hx of approx. 10 months of chronic renal disease; last ~2 weeks has had intermittent vomiting and an intermittent cough and/or gag. PE showed marked dental disease, marked arthritis and kyphotic stance, and ptyalism.

Current Medications: On enalapril 2.5mg BID for past 8 months, epakitin 1 scoop BID for 7 months, apoquel 5.4mg 1/2 tab SID for ~1 month, cerenia 8mg SID prn. Started metoclopramide 2.5mg BID and omeprazole 5mg BID (sent scripts home 8/18).
Lab Results: CBC/Chem: AlkP 237, BUN 177, Creat 2.8, otherwise unremarkable. UA: USG 1.019, mild proteinuria, sediment showed few WBCs, few clumps of transitional cells (catheterized sample), otherwise NSF.

Radiographs: Rads done 8/18 diagnosed sliding hiatal hernia, collapsing trachea, mild hepatomegaly, and chronic IVDD (see report below). Radiologist also noted possible gastric neoplasia; 1) Findings most consistent with cervical tracheal collapse. 2) Microcardias compatible with dehydration vs hypovolemia. 3) Findings most consistent with a sliding hiatal hernia/reflux/regurgitation favored by a most likely mural neoplasia of the lesser curvature of the stomach (described mass) for which the main differential would be a leiomyoma/leiomyosarcoma vs GIST vs other neoplasia not excluded. This suspected sliding hiatal hernia could be at the same time favored by the cervical tracheal collapse wich induces a decreased in the plerual pressure. 4) Hepatomegaly: Metabolic vs Vacuolar infiltration vs Hepatic nodular hyperplasia vs Inflammatory vs Toxic vs Neoplastic or a combination of these differentials.
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 contents. No masses, inflammatory changes, echogenic sediment or cystoliths are observed. The urinary bladder, trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface.

Prostate is symmetrically enlarged with smooth margins that are well differentiated from surrounding tissue. Normal bilobed shape is maintained. Parenchyma is diffusely hyperechoic. Several small anechoic cysts are noted. No mineral is noted.

Kidneys are normal in size but bilaterally irregular and diffusely echogenic with decreased corticomedullary distinction and poor visualization of internal architecture. No mineral is observed. The left kidney measures 4.02 cm. The right kidney measures 3.73 cm. Mild pyelectasia is noted bilaterally. A 2.0 cm diameter cortical cyst is nited in the caudal pole of the left kidney.

Adrenal Glands

The right adrenal gland is normal in size (1.8 cm long x 1.0 cm at the cranial pole and 0.74 cm at the caudal pole), shape and contour. A hyperechoic nodule is noted in the cranial pole pole. Nodule does not disrupt normal shape and/or architecture. Corticomedullary structure is unremarkable. Visible surrounding vasculature appears normal.

The left adrenal gland is enlarged (2.87 cm long x 0.71 cm at the cranial pole and 1.63 cm at the caudal pole) with mild heterogenous parenchymal changes. Swollen capsular expansion is noted without evident capsular escape or vascular invasion.

Spleen
The spleen is subjectively normal in size with a normal smooth capsular contour. Parenchyma is appropriately finely textured and homogenous with normal echogenicity relative to surrounding tissue (hyperechoic to liver). No focal nodules or masses are observed. Splenic vasculature appears normal.

Liver
Liver is subjectively enlarged with mildly irregular margins. Parenchyma is heterogenous characterized by multiple poorly defined hypoechoic nodules within otherwise hyperechoic liver parenchyma. Visible vasculature and biliary tree appear normal without distension or congestion.

Gallbladder is moderately distended with anechoic bile as well as suspended and gravity dependent echogenic debris. The wall is smooth without visible thickening. There is no evidence of cystic or CBD dilation. There is no evidence of effusion or inflammation.

Gastrointestinal
The stomach wall is normal in thickness (canine < 0.5 cm and feline < 0.4 cm) and layering, except along the lesser curvature near the gastroesophageal sphincter, appearing to involve the stomach wall as well as potentially the distal esophagus, where there is an approximately 3.0 cm in diameter hypoechoic mass with complete loss of normal mural detail. A hiatal hernia is suspected based on the appearance of the mass extending into the distal esophagus. The lumen of the stomach is empty with no evidence of obstruction or foreign material. Pyloric outflow tract appears patent.

The visible small intestines are normal in wall thickness and layering (canine duodenum < 0.5 cm and feline duodenum < 0.4 cm; other < 0.3 cm). Small intestinal motility appears adequate (1-3 contractions per min). The lumen of the small intestine is empty with no evidence of obstruction, foreign material or infiltrative disease.

The visible colon is normal in wall thickness (< 0.2 cm) and layering. Contents are consistent with normal formed feces and gas.

Pancreas
The observed pancreas appears appropriately isoechoic to surrounding omental fat. The capsule is mildly irregular in shape. Parenchyma is mildly heterogenous and coarse. There is no visible pancreatic duct dilation. There is no evidence of active peripancreatic inflammation.

Free Abdomen
There is no evidence of free peritoneal effusion noted in these images.

There is no apparent lymphadenopathy noted in these images.

No testicular pathology noted.

PRIMARY FINDINGS

- **Mass at the level of the gastroesophageal sphincter** – Primary differentials include infiltrative neoplasia such as a leiomyosarcoma, adenocarcinoma, a gist, versus other sarcoma or round cell neoplasia. A benign lesion is possible but considered much less likely. A hiatal hernia is also suspected.

- **Left adrenal mass –** consistent with adenoma or possibly hyperplasia. Early pheochromocytoma cannot be ruled out. Interpret in combination with clinical signs of hyperadrenocorticism or other adrenal disease.

- **Hyperechoic adrenal nodule (right adrenal gland) –** Differentials include primary adrenal cortical adenoma or adenocarcinoma, pheochromocytoma, myelolipoma, adrenal hyperplasia secondary to pituitary disease or metastatic disease. Ultrasound alone cannot differentiate between functional and non-functional nodules and/or between benign and malignant disease. Small nodules without other evidence of abdominal disease (to suggest metastatic disease) and/or clinical signs (to suggest adrenal disease) are most often incidental and should be monitored.

- **Heterogenous Liver –** These changes are most consistent with benign processes such as nodular hyperplasia, steroid (vacuolar) hepatopathy, extramedullary hematopoiesis or possibly chronic inflammatory disease and less commonly infiltrative round cell or metastatic neoplasia.

- **Chronic Kidney Disease –** This appearance of the kidneys is consistent with chronic kidney disease such as chronic glomerular or interstitial nephritis, chronic pyelonephritis, etc.

SECONDARY FINDINGS

- Benign prostatic hyperplasia

- **Gallbladder debris -** Cholecystic debris is of unknown clinical significance. It can be seen with biliary stasis from fasting or illness. Cholecystic debris is not necessarily related to hepatobiliary disease. Echogenic bile is most commonly an incidental finding in dogs and should be interpreted in combination with clinical signs such as nausea, inappetence, cranial abdominal discomfort and/or laboratory changes such as increased ALP and/or increased Tbili.

- **Pancreatic age-related remodeling –** Mild irregularities are consistent with benign age-related change. Low-grade smoldering chronic pancreatitis cannot be ruled out and should be suspected in the face of appropriate clinical signs.

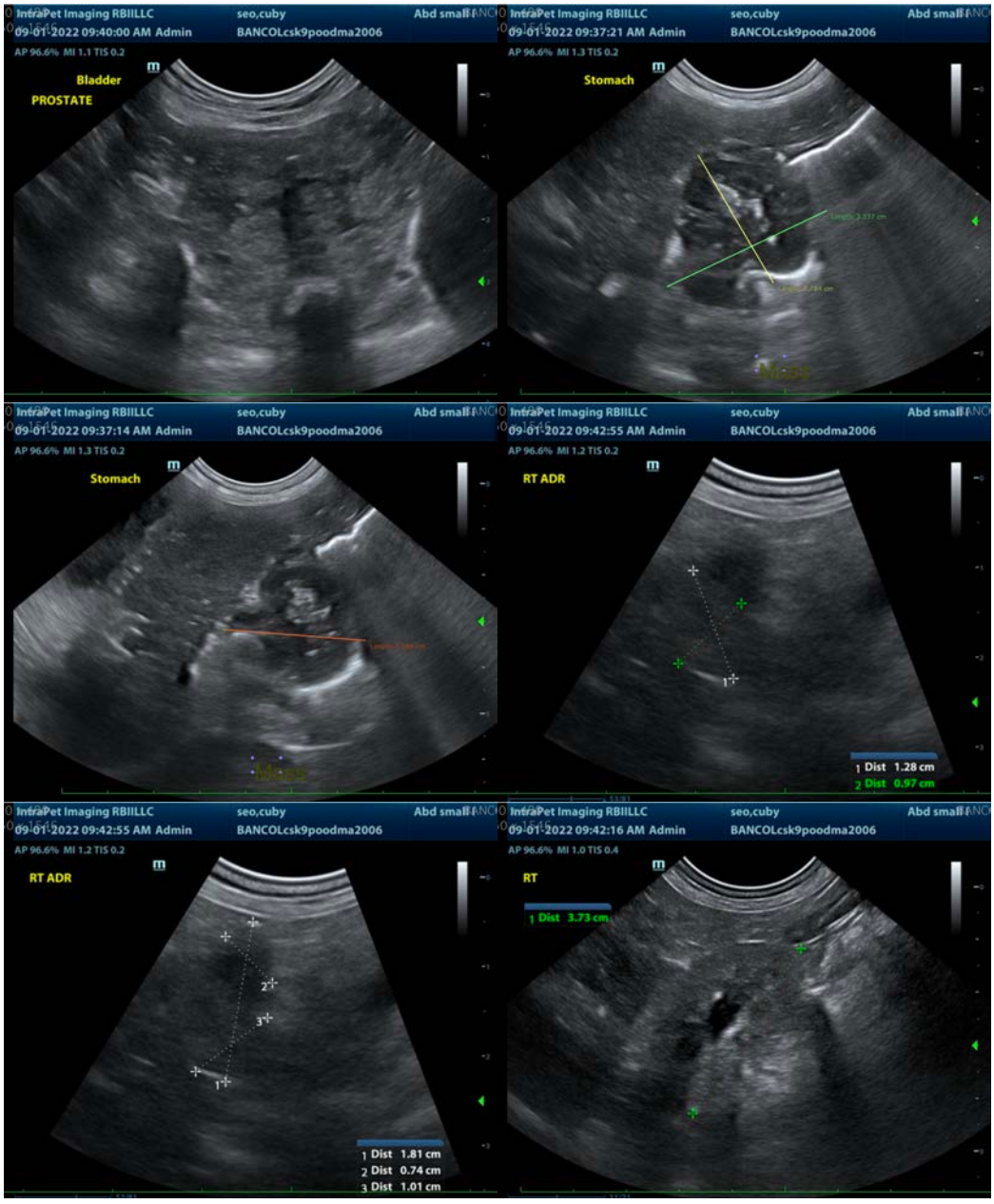
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Three view thoracic radiographs are recommended for further assessment of cardio-pulmonary status as well as to further evaluate for any evidence of metastatic disease, if not recently evaluated.

A fine needle aspirate of the gastric mass could be considered if patient's coagulation status is appropriate. Or, alternatively, given the location, a biopsy is readily accessible via endoscopy, which would allow better visualization of the full extent of the tumor spread into the distal esophagus.

Given this patient's chronic kidney disease and reported proteinuria, a urine protein to creatinine ratio is recommended if not recently evaluated, as well as a blood pressure.

If clinical signs of hyperadrenocorticism are present, testing could be considered in the form of a low-dose Dexamethasone suppression test. However, this finding is considered a secondary finding and of much less clinical importance than the gastric mass. If clinical signs are not present, testing is not indicated, and treatment should not be initiated.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Bladder
PROSTATE
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Mass
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Mass
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RT ADR
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2 Dist 0.74 cm
3 Dist 1.01 cm
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RT
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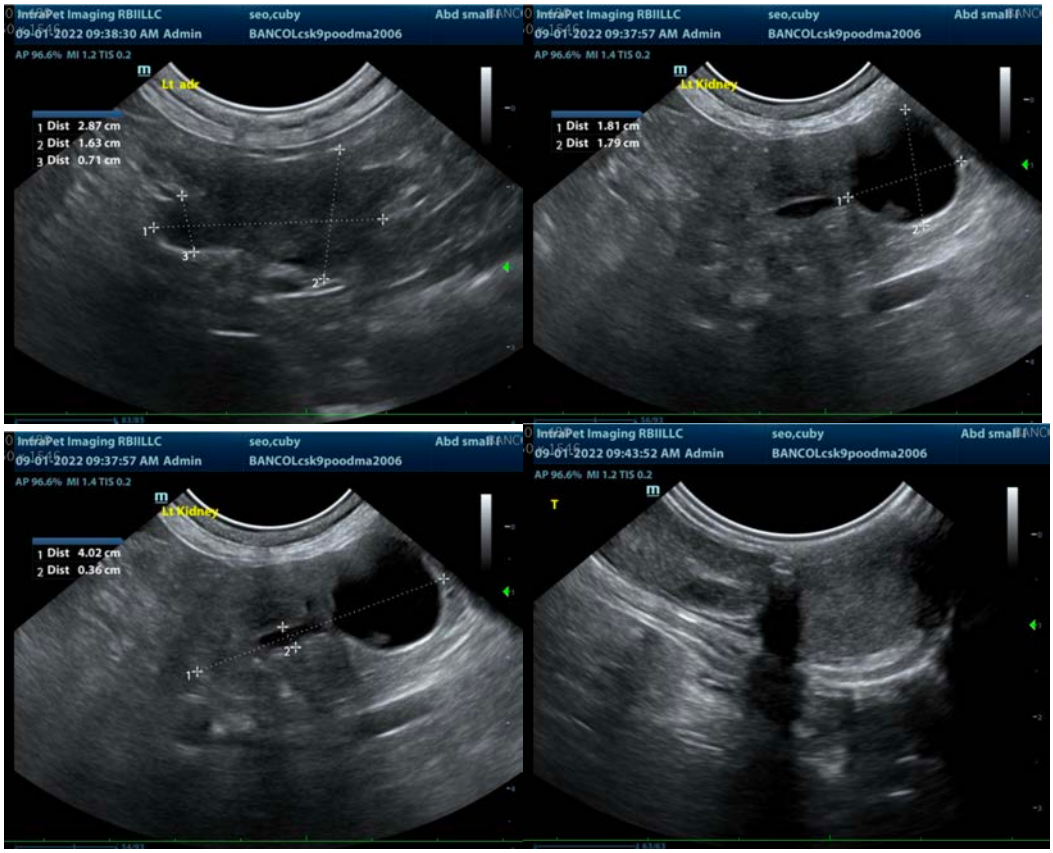
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Lt adr
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2 Dist 1.63 cm
3 Dist 0.71 cm
IntraPet Imaging RBIILLC
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Abd small
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Lt Kidney
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2 Dist 1.79 cm
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AP 96.6% MI 1.4 TIS 0.2
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AP 96.6% MI 1.2 TIS 0.2
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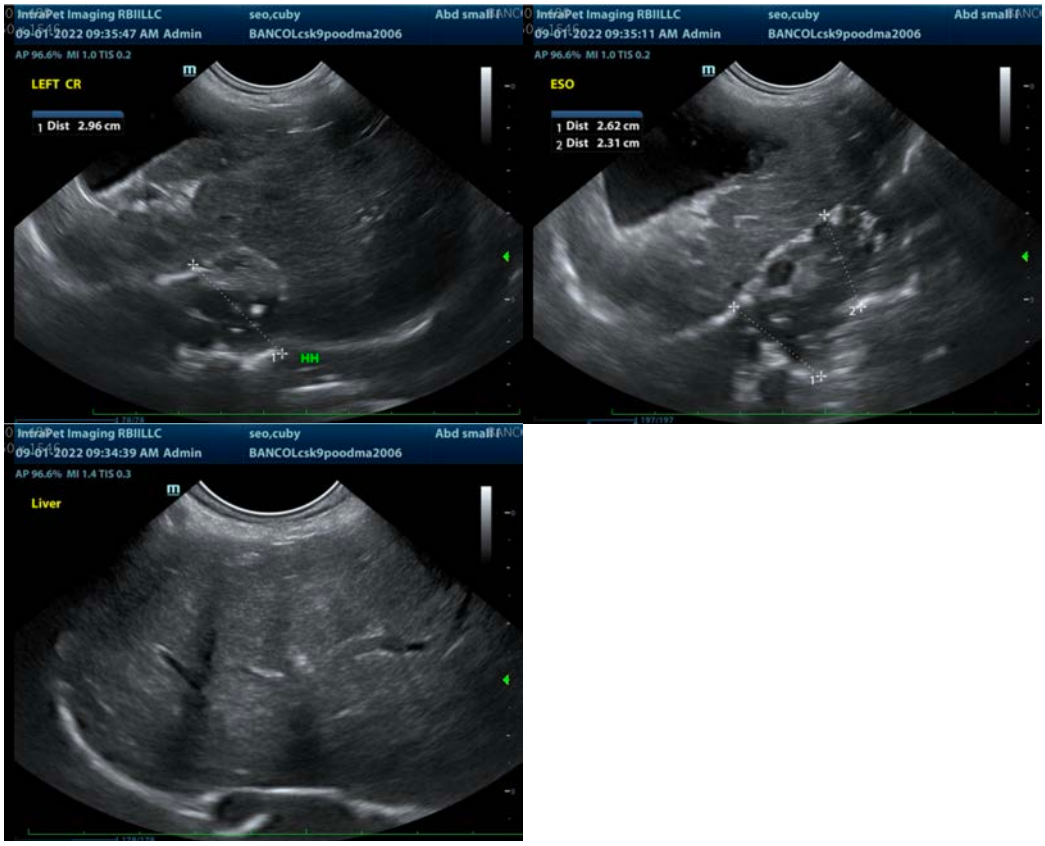

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Beth Johnson, DVM, DACVIM
Beth.Johnson@sonopath.com