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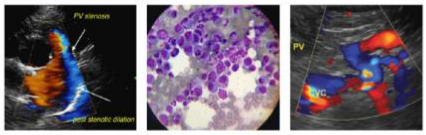

SonoPath
Clinical Sonography & Telecytology
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PATIENT

Puck Buten 255246

SPECIES

Canine

BREED

Mixed Breed

SEX

Neutered Male

AGE

12 Years 2 Months

WEIGHT

14.1 kg

INTERPRETED BY

Lisa Carioto, DVM, DVSc, Diplomate ACVIM

IMAGING PERFORMED BY

Tom McNeill

HOSPITAL NAME

SVS Imaging CT

REFERRING VET

Dr. Wirth- WVRC

INVOICE

16181

DATE

6/17/22

PRESENTING CLINICAL SIGNS

History: Patient has had a suspect metastatic thymic carcinoma v. pulmonary carcinoma for 8 months. Treated with chemotherapy. He acutely developed decreased appetite and diarrhea a few days ago and he has not had chemo recently.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

Although the urinary bladder is inadequately filled, the wall is subjectively thicker than normal and is mildly irregular. Multiple hyperechoic structures, which cast acoustic shadows, are noted along the dependent wall. The latter are consistent with cystoliths.

Pinpoint hyperechoic material is also observed circumferentially along the mucosa, which may be mineralized sediment that is adhered to the mucosa. No abnormalities are noted with the trigone or proximal urethra. There is no evidence of polyps or a mass.

Prostate

The prostate is homogenous and measures 1.22 cm, which is within normal limits for a neutered male.

Kidneys

The **left** kidney measures 4.58 cm. The capsule is smooth. The cortex is mildly hyperechoic and a mild loss of the normal definition of the cortico-medullary junction is present. Mineralizations of the diverticulae and pelvis are present, including nephroliths, the largest one measures 0.45 cm (longitudinal view). Another small nephrolith, measuring 0.28 cm is noted (transverse view).

Very mild, focal diverticular dilation (1.4 mm) is present surrounding the nephrolith. A small anechoic structure (0.23 cm) is noted within the cortex, which is most consistent with a benign cyst. It is not considered clinically significant. Blood flow is within normal limits. The surrounding mesentery is not hyperechoic.

The **right** kidney measures 5.27 cm. The capsule is smooth. The cortex is mildly hyperechoic and a mild loss of the normal definition of the cortico-medullary junction is present. Mineralizations of the diverticulae and pelvis are present, including a small nephrolith (0.28 cm) with focal pyelectasia of 0.24 cm (longitudinal view).

Aortic bifurcation/trifurcation

No abnormalities observed.

Adrenal Glands

The **left** adrenal gland measures 0.49 cm at the cranial pole, 0.52 cm at the caudal pole. No abnormalities are noted with the gland's overall architecture, echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

The **right** adrenal gland measures 0.55 cm at the cranial pole, 0.49 cm at the caudal pole. It measures 0.65 cm at its largest diameter, at the center of the gland. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

Spleen

The spleen is within normal limits in architecture, echotexture, and echogenicity. The capsule is smooth. No abnormalities are observed with its vasculature, i.e. congestion and thrombi are not

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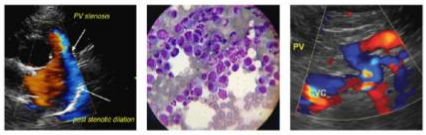

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identified. It appears slightly "generous" in size for a dog of Puck's stature, although this is somewhat subjective.

Liver

Two hyperechoic nodules are observed in the left liver; the first measures 0.78 cm in diameter x 0.78 cm in length. It is subcapsular but does not disrupt the integrity of the capsule. The second measures 0.29 cm in diameter x 0.37 cm in length. No abnormalities are observed with the hepatic vessels visualized.

The gallbladder (GB) is moderately to severely distended with a moderate amount of free floating and inspissated echogenic material, some of which is adhered to the intramural wall. The GB wall is within normal limits in thickness and echogenicity. The portions of the cystic and/or common bile ducts observed are not dilated or tortuous, i.e. there are no signs of an obstruction. The parenchyma surrounding the GB is not hyperechoic.

Gastrointestinal

A marked amount of gas is present within the lumen of the stomach. The gastric wall is within normal limits in thickness and the wall layers are well defined. The mucosa is more prominent than usual. No obvious abnormalities are observed with its peristalsis.

Duodenum: Stippling of the mucosa is present.

Jejunum: Wall thickness is within normal limits and the definition of the wall layers is preserved. The mucosa is mildly prominent and moderate stippling is present throughout a number of segments.

The colonic wall is not thickened and mural detail is considered normal, however the submucosa is more prominent than usual.

Pancreas

The pancreas is heterogeneous and enlarged. Its contours are smooth and regular. It consists of hypoechoic regions and pinpoint to punctate hyperechoic foci scattered throughout the parenchyma. These changes are suggestive of nodular hyperplasia and fibrosis, respectively. However, a portion of the right limb of the pancreas is hypoechoic, which may be due to smoldering inflammation.

Other

Lymph nodes

No abnormalities are observed

Abdominal effusion is not visualized.

ULTRASONOGRAPHIC FINDINGS

- **Gastrointestinal tract**: A subclinical or "emerging" *gastroenteritis* is suspected based on the changes observed with the duodenum and jejunum (mucosal stippling is suggestive of chronic inflammation). Signs of recent diarrhea are present based on the prominent submucosa of the *colon*. There are no signs of neoplasia.

- **Pancreas**: A *smoldering pancreatitis* is suspected. Signs of neoplasia are not appreciated.

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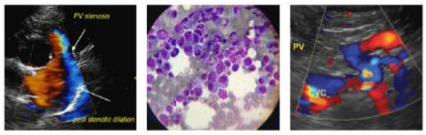

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- **Urinary bladder**: *Multiple cystoliths* with signs of chronic inflammation and a possible urinary tract infection.
- **Kidneys**: *Age-related degenerative changes*, *mineralization, small nephroliths*, with a *small, focal diverticular obstruction in the left kidney*. Although overt signs of pyelonephritis are not visualized, it cannot be excluded.
- **Liver:** A *vacuolar hepatopathy* is suspected, which is likely due to chronic illness and stress. The *two hyperechoic nodules* may be due to fibrosis, i.e., neoplasia is not suspected. Cholestasis cannot be excluded.
- **Gallbladder**: *Gallbladder sludge* is often clinically insignificant, however, gastroesophageal reflux disease (GERD), can occur in some patients. Obtaining a history regarding signs of GERD from the client is suggested. Treatment with an anti-acid or proton pump inhibitor may be required. Note, a secondary bacterial infection ascending from the gastrointestinal tract cannot be excluded, despite the absence of sonographic signs of cholecystitis.
- **Spleen**: If the spleen is mildly enlarged, it may be due to splenitis, such as antigenic stimulation or systemic inflammation. Neoplastic infiltration is not suspected.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The following are suggested/recommended

Obtaining a history regarding signs of GERD from the client is suggested. Treatment with an anti-acid or proton pump inhibitor may be required. Note, a secondary bacterial infection ascending from the gastrointestinal tract cannot be excluded, despite the absence of sonographic signs of cholecystitis.

CBC, serum biochemical profile, urinalysis

urine culture and sensitivity

Spec cPL

Arterial blood pressure

If being hospitalized,

- IV fluids
- Analgesia IV (opioid), +/- CRI lidocaine and ketamine, gabapentin PO if tolerant
- maropitant (Cerenia) intravenously, at 1 mg/kg
- If Cerenia is ineffective, you could try combining it with metoclopramide as a CRI. Ondansetron is another option (IV, SQ or PO), although it is more expensive.
- Antibiotics are not necessary unless hematemesis is observed or hematochezia or melena with signs of sepsis or if neutropenic (less than 2.0 x 10^9/L)

If not being hospitalized

- SQ fluids
- Analgesia PO, including an opioid (methadone or buprenorphine) and gabapentin
- maropitant (Cerenia), or metoclopramine or ondandsetron PO

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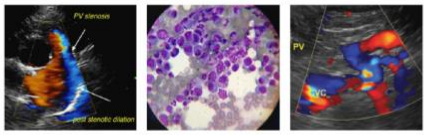

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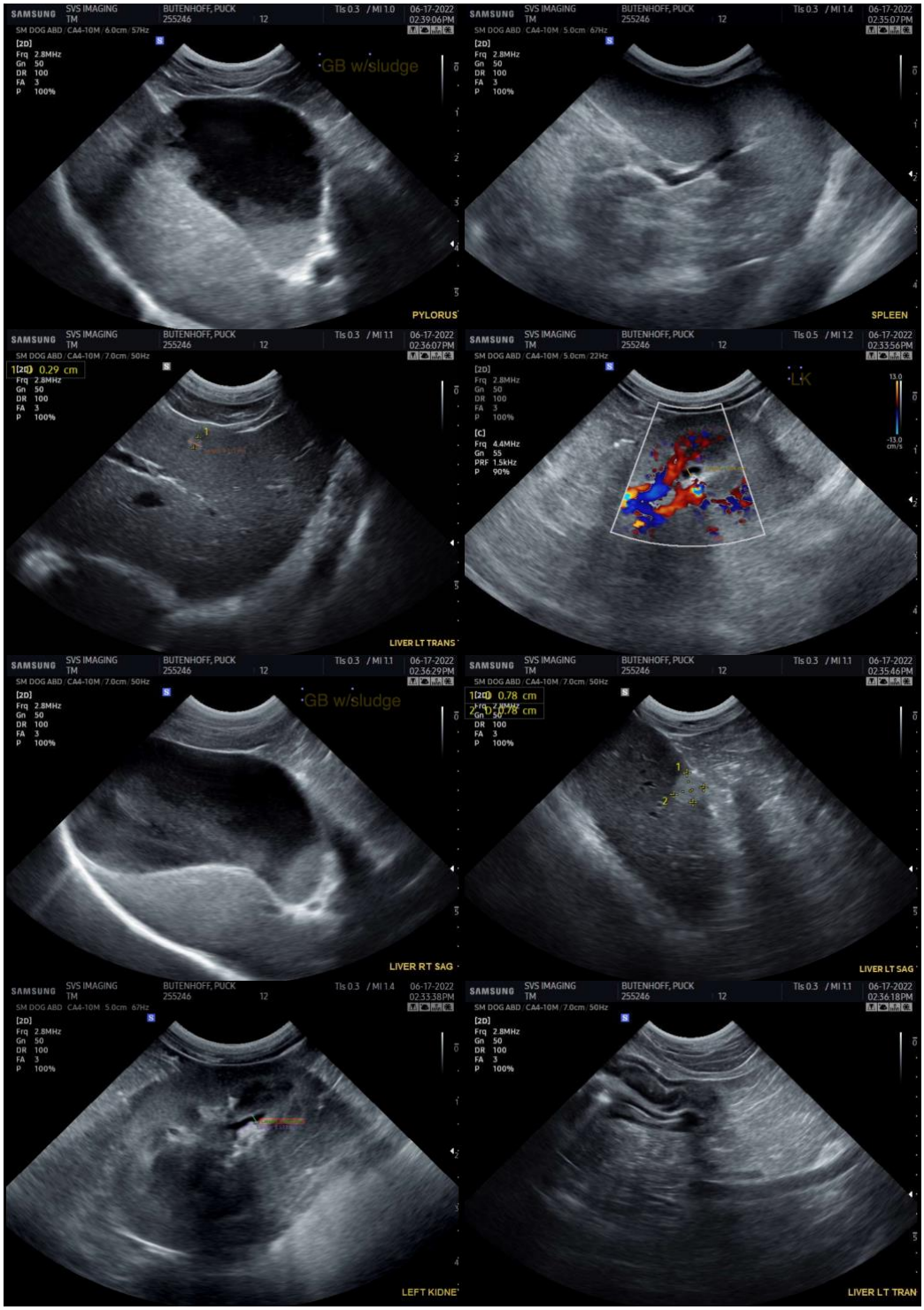
- Antibiotics are not necessary unless hematemesis is observed or hematochezia or melena with signs of sepsis or if neutropenic (less than 2.0 x 10^9/L)

Once he is ready to eat, a bland, easily digestible, low fat, moderately restricted fibre diet is recommended to help decrease bloating and cramps.



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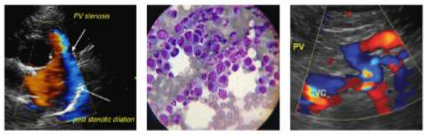

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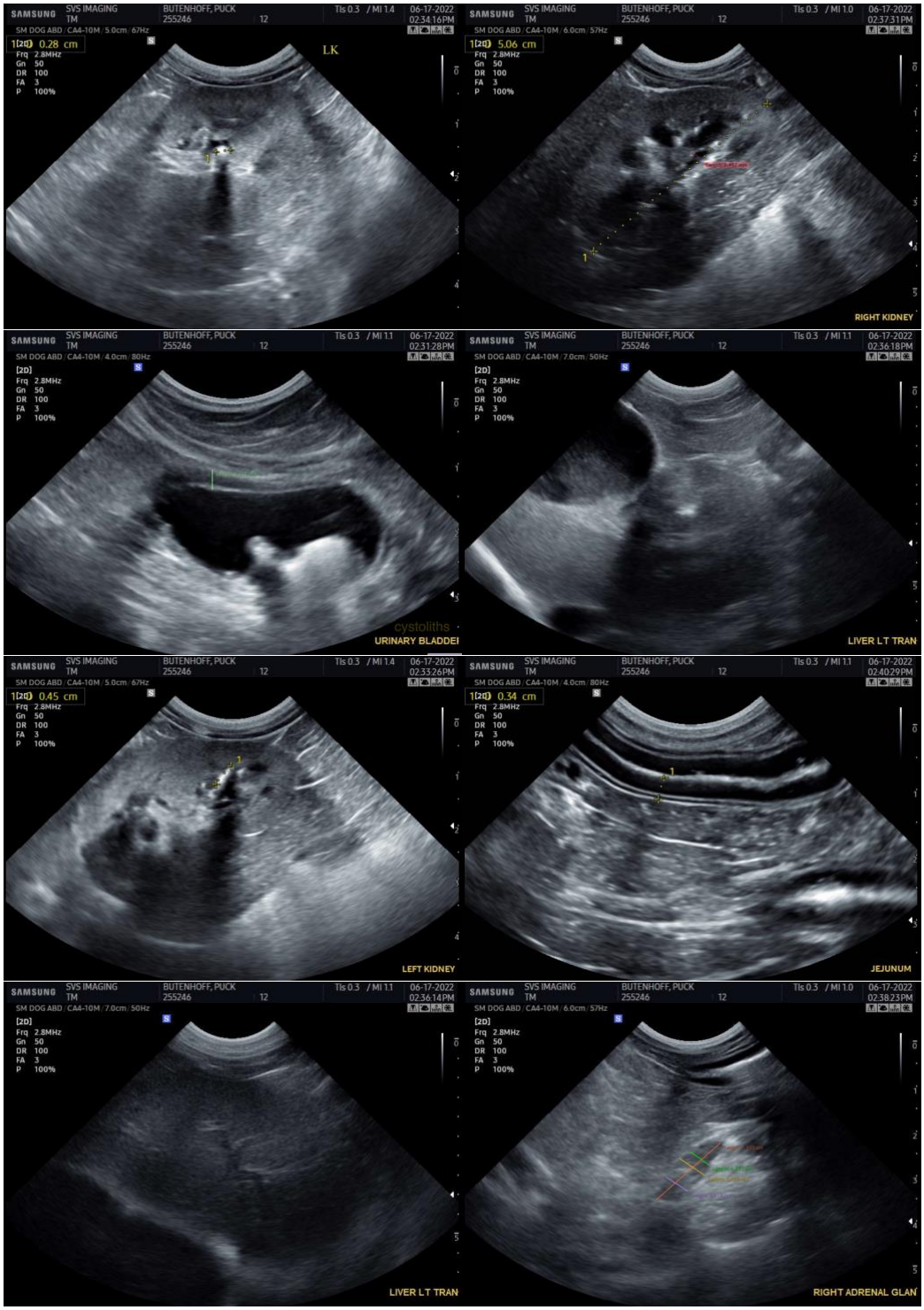

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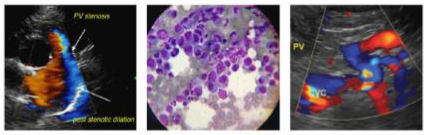

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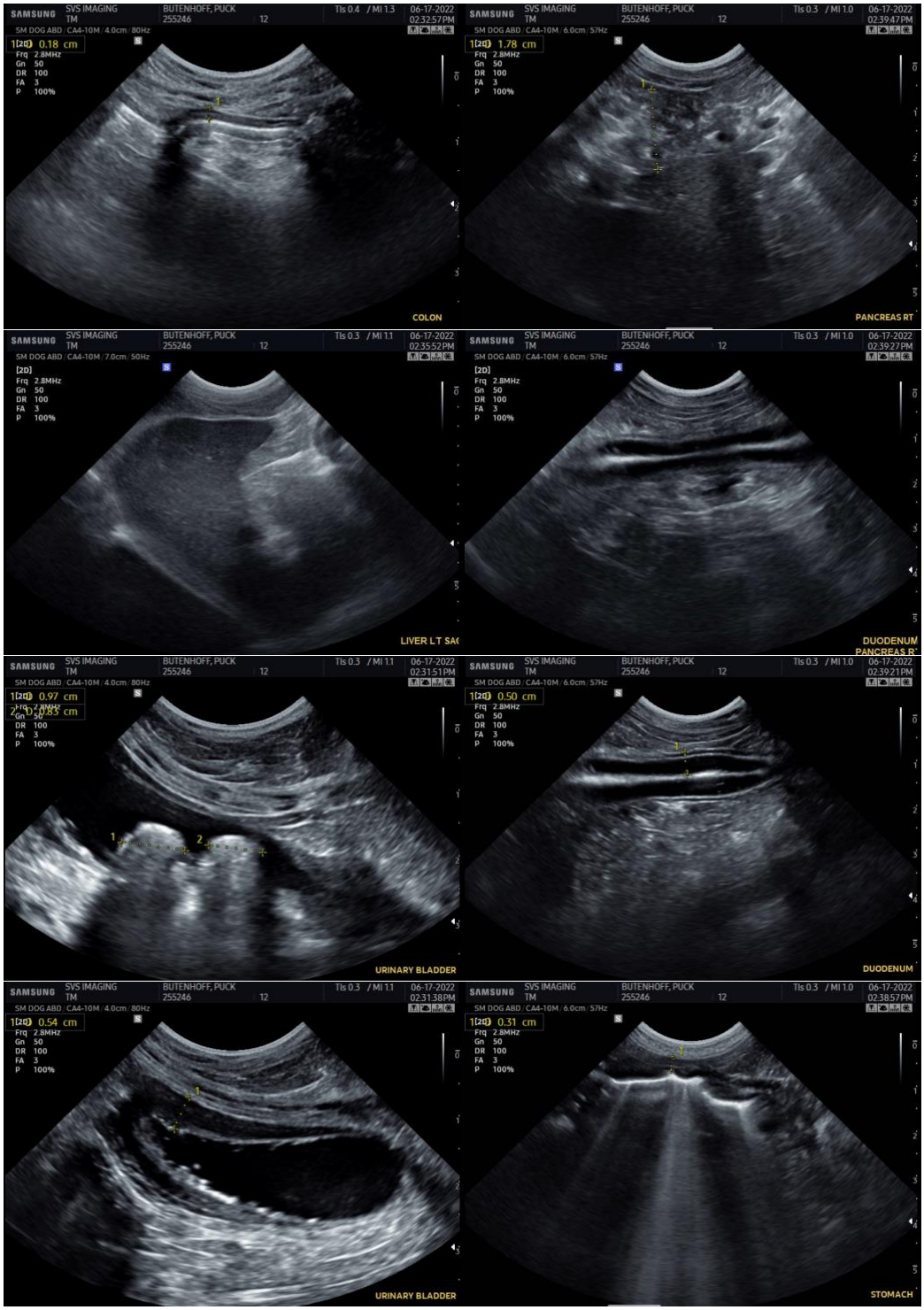

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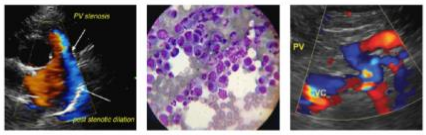

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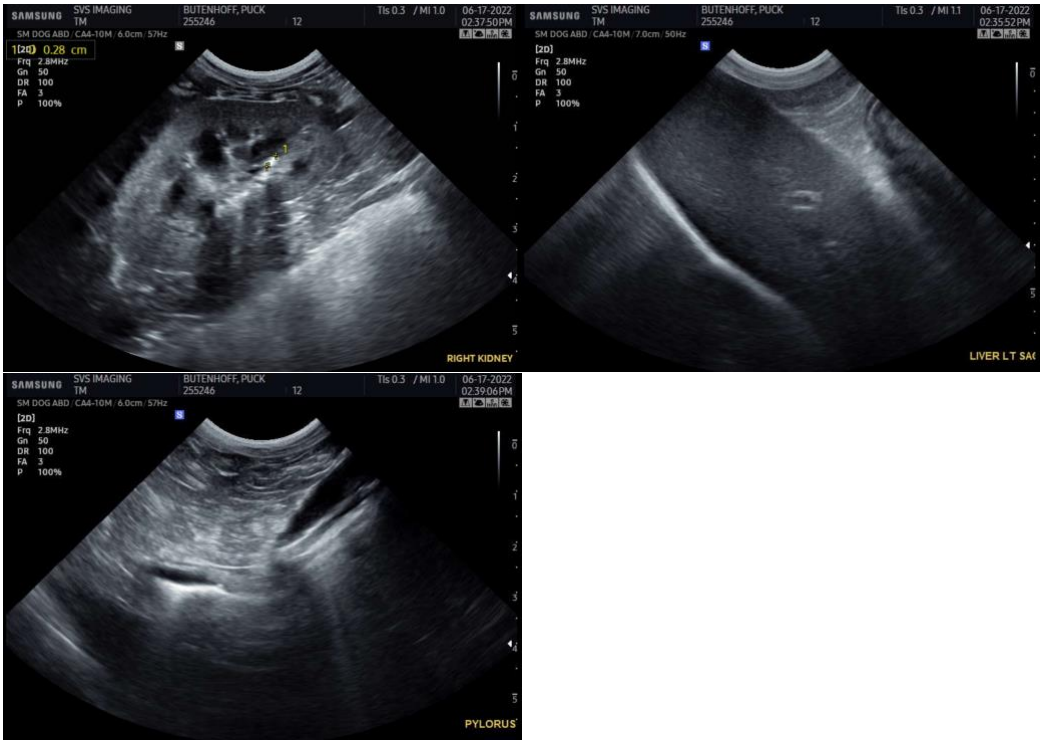

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Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance please contact me.

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