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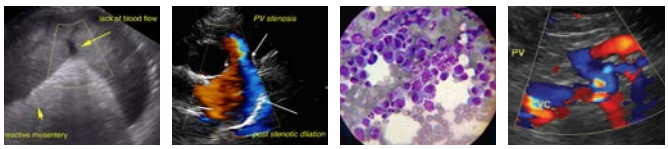
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™



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1-800-838-4268 info@sonopath.com

PATIENT
Tiny Ballard

SPECIES
Canine

BREED
Chihuahua

SEX
Neutered Male

AGE
11 Years

WEIGHT
19.4 Pounds

INTERPRETED BY
Eric Lindquist, DMV
DABVP, Cert. IVUSS

IMAGING PERFORMED BY
Dr. Harold Mike Beard

HOSPITAL NAME
Animal Care Vet Center

REFERRING VET
Dr. Harold Mike Beard

INVOICE
47266

DATE
5/10/23

PRESENTING CLINICAL SIGNS

Had Cushing's Dz, Diabetes mellitus (on Vetsulin), COPD, and a gall bladder mucocele. Gall bladder was removed on 5/4/23. Developed DKA over the weekend. In hospital with IV fluids, ABs, Cerenia, and Simbadol.

Abnormal PE/Chem/CBC/UA Results: CBC mild neutrophilia. Chemistry hyperglycemia, increased cholesterol, mild increase ALT and serum alk phos. Tryglycerides are elevated.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

Urinary bladder is adequately distended. It has a normal uniform wall thickness. Contents include primarily anechoic fluid with occasional echogenic non-shadowing debris, most consistent with exfoliated cells, mucous and/or small blood clots. Both sterile inflammation as well as urinary tract infection can also present with echogenic debris. No masses or cystoliths are observed. The trigone and visible pelvic urethra are normal in thickness with a smooth mucosal surface.

Prostate is normal in size, echotexture and echogenicity for a neutered male.

Kidneys are overall normal in size and shape with smooth peripheral margination. A normal 1:3 cortex to medulla ratio is maintained. The medulla and cortices are uniform in texture with some mild increased cortical echogenicity and mild loss of corticomedullary distinction, expected in this age patient. There is no evidence of infarcts observed. The left kidney measures 5.22 cm. The right kidney measures 4.43 cm. Non-obstructive dystrophic mineralization noted bilaterally. Pyelectasia measures 0.15 cm in the sagittal view on the left and 0.23 cm in the sagittal view on the right. A hyperechoic band parallel to the corticomedullary border is present in both kidneys.

Adrenal Glands

The adrenal glands are unable to be well visualized in these images.

Spleen

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. Multifocal mineral foci are noted. Splenic vasculature appears normal.

Liver

Liver is subjectively enlarged (swollen contour) without disruption of architecture. It has a normal homogenous echotexture. Parenchyma is diffusely hyperechoic characterized by less prominent than normal portal vein walls and increased echogenicity relative to the spleen and falciform fat. No focal lesions are observed. Visible vasculature and biliary tree appear normal without distension or congestion.

The gallbladder has been previously removed.

Gastrointestinal

The stomach wall is normal in thickness (canine < 0.5 cm and feline < 0.4 cm) and layering. The lumen of the stomach is moderately overdistended with echogenic non-shadowing luminal contents, fluid, and gas, consistent with normal ingesta/chyme. There is no evidence of obstruction, foreign material or infiltrative disease. However, the pyloric outflow tract is not able to be fully visualized in these images.

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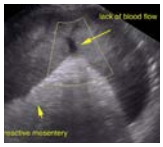
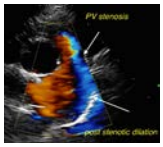
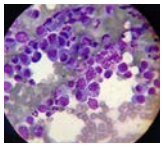
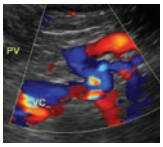

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The visible small intestines are normal in wall thickness and layering (canine duodenum < 0.5 cm and feline duodenum < 0.4 cm; other < 0.3 cm). Small intestinal motility appears adequate (1-3 contractions per min). The lumen of the small intestine 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 is prominent (enlarged) in size, hypoechoic to surrounding tissue and irregular in shape with a swollen undulating contour. Enhanced hyperechoic ill-defined surrounding fat is noted.

Free Abdomen

There is a small amount of anechoic free fluid present in these images, as well as large amount of enhanced hyperechoic mesenteric fat appreciated diffusely, but more significantly in the cranial abdomen.

There is no apparent lymphadenopathy noted in these images.

ULTRASONOGRAPHIC FINDINGS

- Acute pancreatitis suspected based on these images. However, some of the free fluid and enhanced mesenteric fat are likely normal resolving post-operative changes, so the degree of inflammation associated with the pancreas is difficult fully interpret.
- **Hyperechoic hepatomegaly -** This appearance is non-specific and most consistent with a benign steroid (endocrine) or vacuolar hepatopathy or reactive or idiopathic hepatopathy. Inflammatory and/or infiltrative disease (such as round cell neoplasia) are also possible, but considered less likely.
- **Spleen mineralization –** This is a benign change but can be associated with endocrinopathies, especially hyperadrenocorticism.
- **Age related kidney changes with mild bilateral pyelectasia and non-obstructive dystrophic mineralization –** Differentials for pyelectasia include pyelonephritis, diuresis, congenital malformation or ureteral or lower urinary tract obstruction.
- **Bilateral medullary rim sign -** This finding is of unknown clinical significance and can be a normal variant, often idiopathic. Medullary rim sign can be present with renal disease including FIP, lymphoma, hypercalcemic nephropathy, Leptospirosis, tubular disease, other and should be interpreted in combination with other more specific indications of kidney disease such as isosthenuria, proteinuria, azotemia, etc. This is a common incidental finding in patients with diabetes mellitus.
- Urinary bladder debris
- The gallbladder has been removed.

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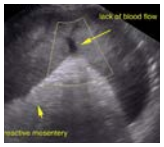
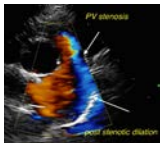
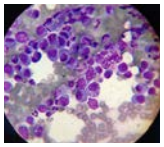
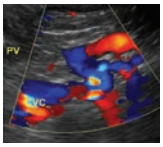

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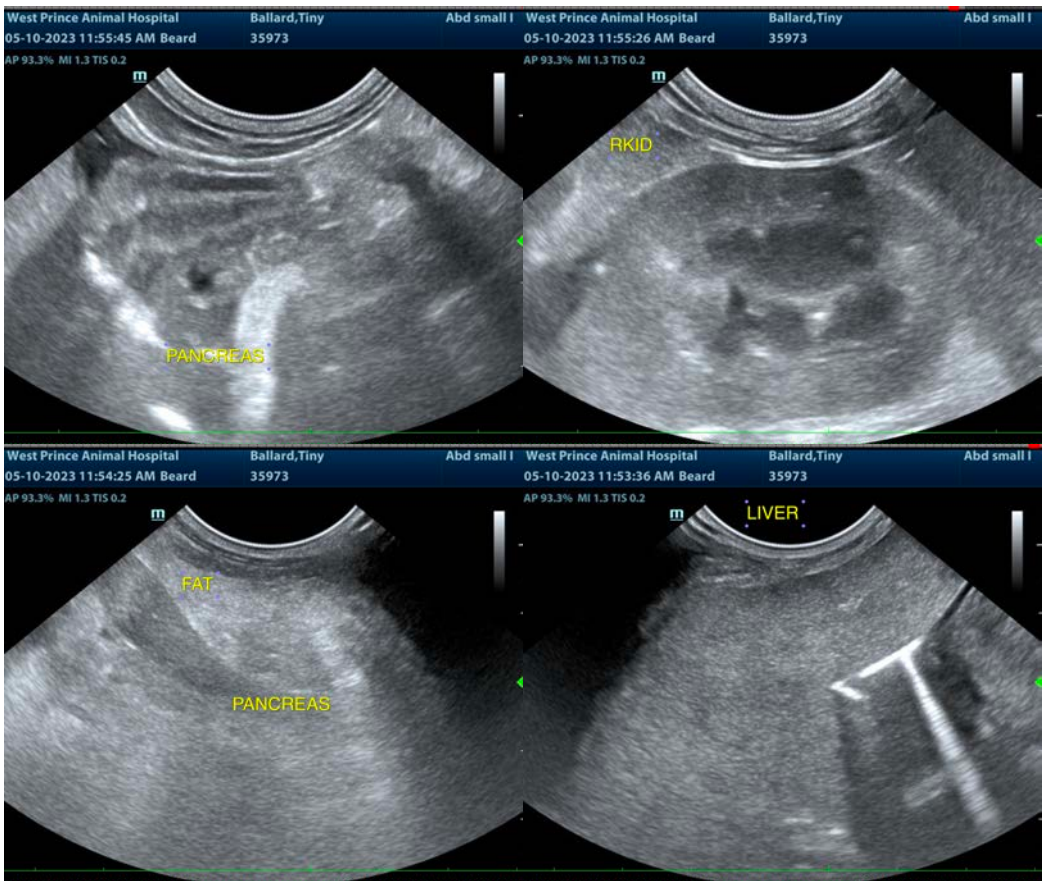
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

If not recently evaluated, a quantitative PLI is recommended. The free fluid and enhanced mesenteric fat is likely partially attributed to recent therapy and partially attributed to pancreatitis. Having said that, a septic abdomen cannot be definitively ruled out without sampling. At this time, the volume of fluid might be too small to sample, but after the patient is rehydrated, if the free fluid volume expands and a sample can be safely obtained, sampling for cytology and to rule out septic abdomen more definitively is recommended.

If not recently evaluated, Urinalysis and, if indicated based on urinalysis results, urine culture are recommended. If protein is present in an otherwise quiet sediment, protein quantification with a urine protein to creatinine ratio is recommended.

In the meantime, medical management of pancreatitis with anti-emetics, gastroprotectants, appetite stimulants or nutritional support as needed, pain management, broad spectrum antibiotics, and fluid therapy is recommended. Additionally, short-acting insulin therapy is recommended with close monitoring of blood sugars, ketones, electrolytes, etc. to allow for adjustments while in hospital. Once ketones have resolved and patient is eating reliably, transition back to patient's normal at-home insulin could be done.



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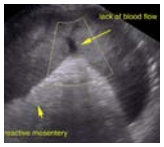
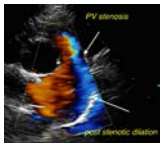
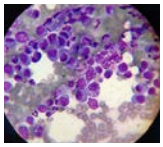
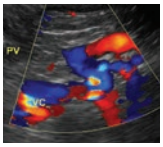

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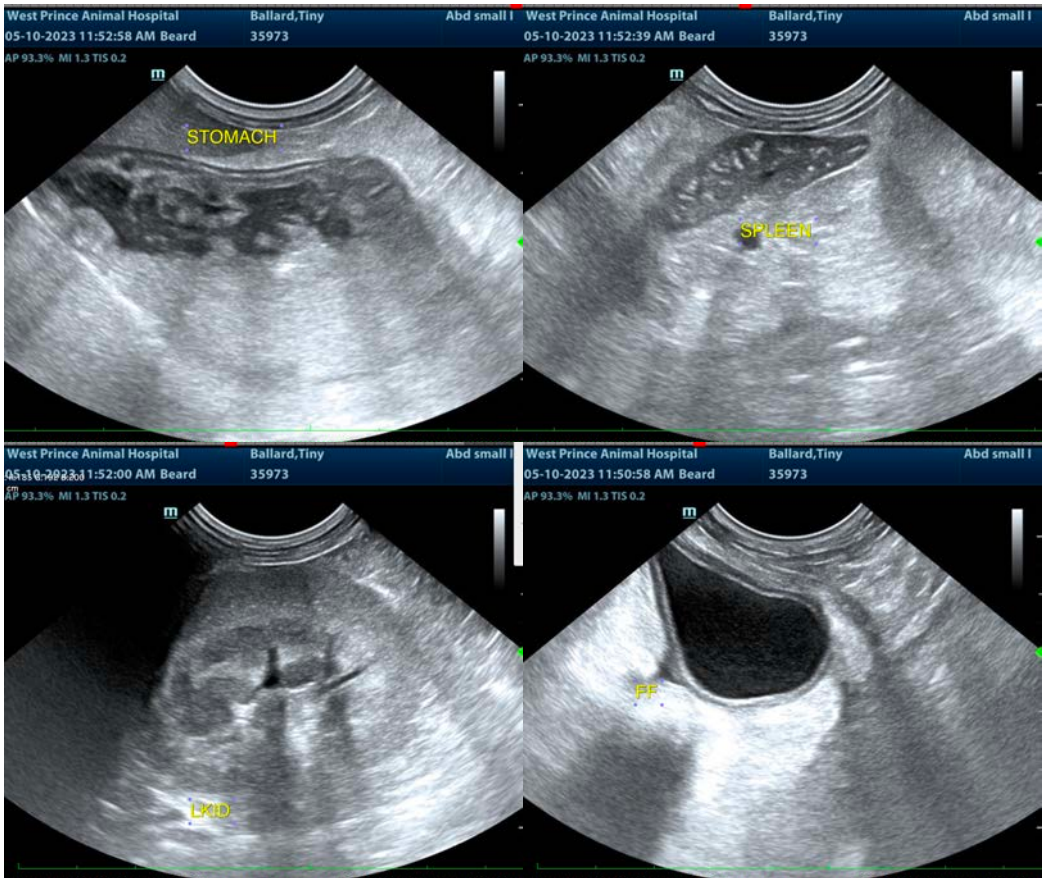

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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