



PATIENT

Princess Cruz

SPECIES

Canine

BREED

Chihuahua

SEX

Spayed Female

AGE

17 years

WEIGHT

2.5 lbs

INTERPRETED BY

Lisa Carioto, DVM,
DVSc, Diplomate
ACVIM

**IMAGING
PERFORMED BY**

Kelly Vazquez, CVT

HOSPITAL NAME

Animal General on
Hudson

REFERRING VET

Dr. Lang

INVOICE

98116

DATE

4/5/22

PRESENTING CLINICAL SIGNS

Patient presents for severely elevated liver and kidney values, acute weight loss. Current med: aluminum hydroxide.

Abnormal PE/Chem/CBC/UA Results: AST 77, ALT 526, ALP 199, BUN 136, creatinine 3.2, phosphorous 10, calcium 8, HCT34, T4 0.6, platelet count 882. U/A and urine culture pending.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is adequately filled. The wall is smooth and regular. There is no evidence of sediment, cystoliths, polyps or a mass. Ureteral papillae are visualized and unremarkable. No obvious abnormalities are observed with the trigone, however, an in-depth evaluation of the proximal urethra is not available.

Kidneys

The **left** kidney measures 2.42 cm. Although the capsule is smooth, the cortex is thicker than what is considered normal. It is moderately hyperechoic and has a granular echotexture. A moderate loss of the normal definition of the cortico-medullary junction is present. Moderate pyelectasia is present with echogenic urine, suggestive of pyelonephritis. Mild mineralizations are present without evidence of nephroliths. Hydroureter is not noted. The surrounding mesentery is mildly hyperechoic.

The **right** kidney measures (2.45 cm). Findings are similar to the left kidney, however, the loss of the normal definition of the cortico-medullary junction is considered severe.

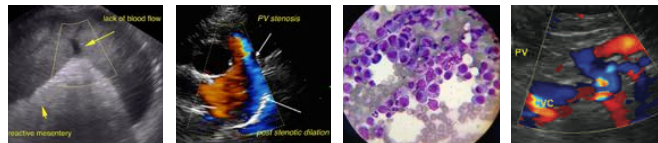
Adrenal Glands

The **left** adrenal gland measures 0.42 cm at the cranial pole, 0.57 cm at the caudal pole and 1.24 cm in length. The caudal pole is rounded and "plump". The latter is at the high end of the normal reference range. An obvious mass and abnormalities with the echogenicity or echotexture are not identified. There are no abnormalities in the phrenicoabdominal veins or the surrounding vasculature.

The **right** adrenal gland measures 0.59 cm at the cranial pole, 0.34 cm at the caudal pole and 0.77 cm in length. The cranial pole is considered enlarged for a dog of Princess' stature and a nodule is present. There is no evidence of neoplasia. No abnormalities are noted with the gland's echogenicity or echotexture. The phrenico-abdominal vein and surrounding vasculature and mesentery are unremarkable.

Spleen

The capsule of the spleen is smooth. No abnormalities are observed with its echogenicity, echotexture, shape or size.



PATIENT	Liver
Princess Cruz	There are no obvious signs of hepatomegaly. Its borders are smooth, but mildly rounded. A diffuse, mildly coarse or granular echotexture is observed, in addition to hypoechoic nodules of variable size. A heterogeneous region measuring 1.06 cm in diameter x 1.60 cm in length is noted. It appears somewhat encapsulated with anechoic regions, suggestive of cysts of variable size and shape. No obvious abnormalities are noted with the hepatic vessels.
SPECIES	
Canine	
BREED	Gallbladder
Chihuahua	A moderate amount of well-organized echogenic material (sludge) is visualized within the gallbladder. Although it is well organized, free floating material is also observed. The sludge varies in echogenicity and appears mildly inspissated, with mucus strings. It does not have the appearance of a mucocele and the inspissated material moves as a single "structure". Biliary flukes, although uncommon, cannot be excluded. The biliary system is otherwise within normal limits, i.e. there are no signs of an obstruction.
SEX	
Spayed Female	
AGE	Gastrointestinal Tract
17 years	The gastric wall is normal in thickness. The definition of wall layers is not as "crisp" as usual, which is suggestive of inflammation. Gas is present, however, no obvious abnormalities are noted with its peristalsis.
WEIGHT	
2.5 lbs	A number of loops of small intestine are dilated with ingesta that has a granular in consistency. Mild to moderate fogging of the mucosa is present throughout, despite having a wall thickness within normal limits.
INTERPRETED BY	The definition of the wall layers is relatively well preserved. The surrounding mesentery is mildly to moderately hyperechoic.
Lisa Carioto, DVM, DVSc, Diplomate ACVIM	"Ineffective" peristalsis is noted throughout the entire GI tract, i.e., a "to and fro" motion is observed, consistent with a mild to moderate ileus.
IMAGING PERFORMED BY	The transverse colon is filled with a large amount of gas and granular appearing, hyperechoic ingesta. The colonic wall is not thickened and mural detail is considered normal. There are no obvious signs of a foreign body or an obstruction.
Kelly Vazquez, CVT	
HOSPITAL NAME	Pancreas
Animal General on Hudson	The left limb has a coarse echotexture and is mildly heterogeneous. Hypoechoic regions, suggestive of edema, are observed, in addition to occasional hypoechoic nodules of variable size and hyperechoic foci. The former are most likely due to nodular hyperplasia, while the hyperechoic foci may be due to age-related fibrosis, and/or previous episodes of pancreatitis, as well as amyloid deposition. The hypoechoic regions and hyperechoic surrounding mesentery may be due to active pancreatitis.
REFERRING VET	
Dr. Lang	
INVOICE	The right limb is markedly heterogeneous and has a very granular, coarse echotexture, in addition to anechoic elongated structures, suggestive of cysts. Ill-defined hypoechoic areas are observed, in addition to hypoechoic nodules and hyperechoic foci and a hyperechoic mesentery. Active pancreatitis is suspected, in addition to age-related changes, however, neoplasia cannot be excluded.
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PATIENT	Other
Princess Cruz	Lymph nodes There is no evidence of lymphadenomegaly.
SPECIES	Abdominal effusion is not observed.
Canine	
BREED	ULTRASONOGRAPHIC FINDINGS
Chihuahua	The renal changes are suggestive of chronic renal disease, and age-related degeneration. The pyelectasia of the left kidney is larger than one would expect from an individual suffering from PU/PD, however, an obvious obstruction is not identified. The renal changes, in addition to the echogenic urine within the left pelvis are highly suggestive of bilateral pyelonephritis.
SEX	Active pancreatitis is suspected, in addition to age-related changes, however, neoplasia cannot be excluded.
Spayed Female	
AGE	Bilateral adrenomegaly, with an enlarged caudal pole of the left adrenal and enlarged cranial pole of the right, respectively, are suggestive of benign adenomas. However, hyperplasia due to stress (chronic disease) and pituitary dependent hyperadrenocorticism cannot be excluded. There are no obvious signs of neoplasia. These are most likely incidental findings and not clinically relevant to Princess' current clinical signs.
17 years	
WEIGHT	A reactive hepatopathy and nodular regeneration are suspected based on the coarse, granular hepatic echotexture and diffuse hypoechoic nodules of variable size. Differential diagnoses for the cystic structure include a cystadenoma/cystadenocarcinoma. Although the presence of gall bladder sludge may be clinically insignificant, an evaluation of Princess' history is suggested to exclude the possibility of exposure to liver flukes, and also to ensure she is not suffering from signs of gastroesophageal reflux disease. It should be noted that cholecystitis cannot be excluded despite the absence of sonographic signs.
2.5 lbs	
INTERPRETED BY	Ileus of the gastrointestinal tract may be present secondary to pancreatitis. Although obvious signs of GI neoplasia are not visualized, infiltrative disease cannot be excluded.
Lisa Carioto, DVM, DVSc, Diplomate ACVIM	
IMAGING PERFORMED BY	INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS
Kelly Vazquez, CVT	A urinalysis and urine culture and sensitivity are pending, however, Enrofloxacin is highly recommended pending results as pyelonephritis is strongly suspected. Although not ideal, a single dose of cefovecin (Convenia) may be administered pending the culture results due to Princess' hyporexia. Prolonged treatment (6-8 weeks) is necessary for the treatment of pyelonephritis.
HOSPITAL NAME	A urine protein: creatinine ratio is suggested a few weeks following resolution of an infection.
Animal General on Hudson	A FNA of the liver and pancreas may be performed to exclude neoplasia, however, cytology is often not effective in differentiating cystadenomas from cystadenocarcinomas.
REFERRING VET	An arterial blood pressure is suggested.
Dr. Lang	Analgesia for the treatment of visceral pain, such as buprenorphine and gabapentin, are suggested, as well as supportive care, +/- subcutaneous fluids. A low fat, easily digestible diet that is moderately restricted in fibre is recommended to help decrease gas and bloating. However, it is of utmost importance that Princess eats in order to prevent further catabolism and sarcopenia.
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Princess is a complicated patient, and although some treatment recommendations have been described, an internal medicine consult is suggested in order to describe all possible options in further detail.

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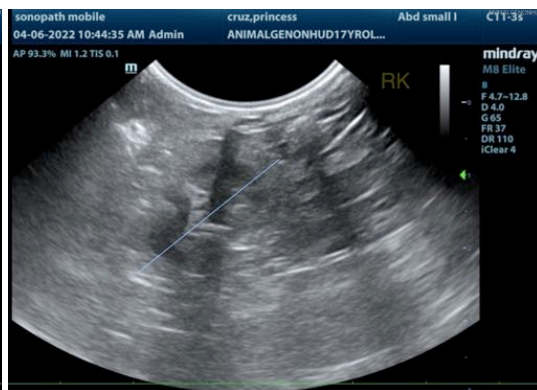
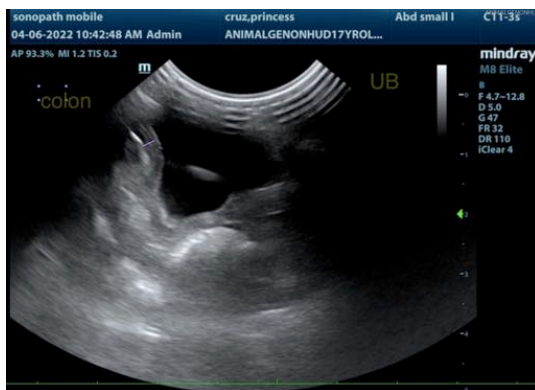
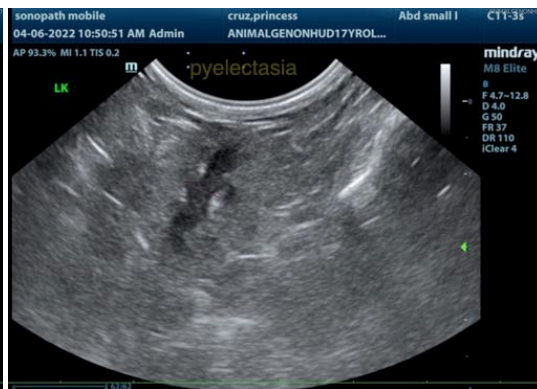
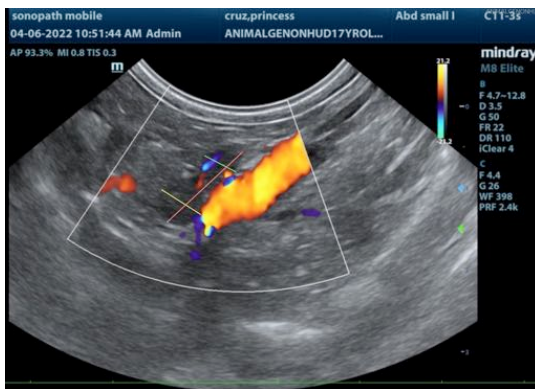
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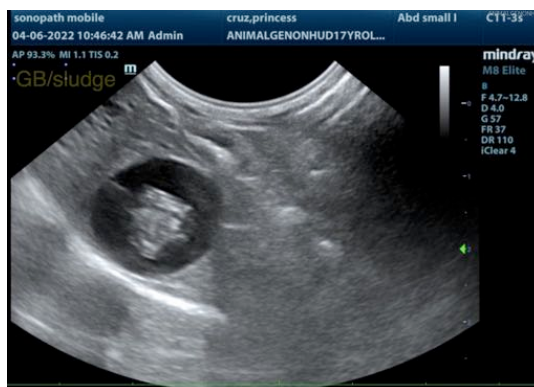
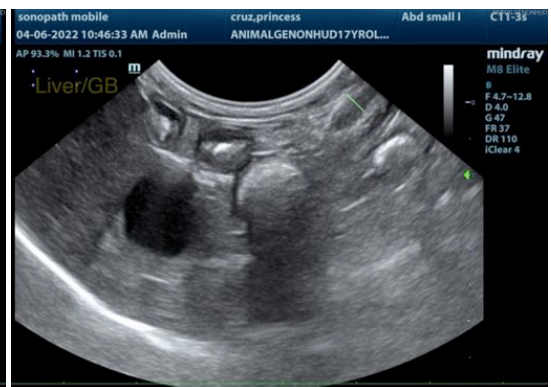
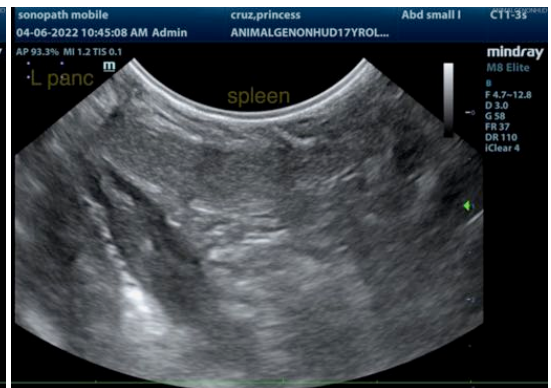
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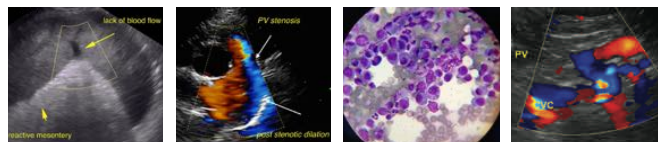
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Lisa Carioto, DVM, DVSc, Diplomate ACVIM

Lisa.Carioto@sonopath.com