



PATIENT

Kit Kat Benert

PRESENTING CLINICAL SIGNS

History: Hyperthyroidism treated for several years with methimazole. Recently developed renal failure.

Abnormal PE/Chem/CBC/UA Results: BUN 78, Creat 9, HCT 23, Urine sp g 1.010

SPECIES

Feline

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

Urinary System

The urinary bladder is well distended. The wall is smooth and regular. No abnormalities are present with the trigone or proximal urethra. A small to moderate amount of free floating sediment is present, however, there is no evidence of cystoliths, polyps or a mass.

BREED

Domestic Shorthair

SEX

Neutered male

Kidneys

The **left** kidney measures 4.58 cm (3.80-4.40 cm); mildly enlarged, rounded and “swollen” in appearance. 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 pelvis are present, without evidence of nephroliths or pyelectasia. An accumulation of intrapelvic fat is noted. The surrounding mesentery is very mildly hyperechoic.

AGE

14 years

WEIGHT

14.6 lbs

The **right** kidney measures 4.17 cm (3.80-4.40 cm). The capsule is mildly irregular. The cortex is moderately hyperechoic and a moderate loss of the normal definition of the cortico-medullary junction is present. Hyperechoic regions are noted at both poles at the level of the cortex and at the cortico-medullary junction. These areas are suggestive of inflammation and/or ischemia and fibrosis. They are not well defined to suggest infarcts. The mesentery is hyperechoic. Blood flow is decreased. The surrounding mesentery is hyperechoic.

INTERPRETED BY

Lisa Carioto, DVM,
DVSc, Diplomate
ACVIM

Aortic bifurcation/trifurcation

No abnormalities observed.

IMAGING PERFORMED BY

Dr. Mike Beard

Adrenal Glands

HOSPITAL NAME

West Prince AH

Not visualized, however, the regions where they should be located do not reveal any abnormalities.

REFERRING VET

Dr. Stone

Spleen

The spleen is within normal limits in size 9.3 mm (normal = 10 mm), echotexture, and echogenicity. The capsule is smooth. Punctate and pinpoint hyperechoic foci are dispersed haphazardly throughout the spleen. The latter are consistent with mineralizations. No abnormalities are observed with its vasculature, i.e. congestion and thrombi are not identified.

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PATIENT	Liver
Kit Kat Benert	Hepatomegaly is suspected, however, this is better characterized at the time of the ultrasound or with radiographs. The liver's borders are smooth and sharp. The liver's echotexture is homogeneous, however, it is mildly to moderately hyperechoic, i.e., it is isoechoic to mildly hyperechoic to the falciform fat. A very mildly hypoechoic (almost isoechoic) nodule is noted. It measures 8.67 mm in diameter x 8.62 mm in length. No abnormalities are observed with the hepatic vessels.
SPECIES	
Feline	
BREED	
Domestic Shorthair	The gallbladder (GB) wall is very mildly increased in thickness and very mildly hyperechoic. A moderate amount of inspissated and free floating echogenic material is present within the GB. The latter casts a shadow. The inspissated sludge has forming nodules. 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.
SEX	Gastrointestinal
Neutered male	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. No obvious abnormalities are observed with its peristalsis.
AGE	
14 years	The duodenum is within normal limits in thickness. The definition of wall layers is preserved, however, subjectively, the muscularis is more prominent than usual.
WEIGHT	
14.6 lbs	Gas, ingesta and fluid are present within the small intestines. The definition of the wall layers is preserved.
INTERPRETED BY	Pancreas
Lisa Carioto, DVM, DVSc, Diplomate ACVIM	The body is enlarged, diffusely hypoechoic and has irregular contours. Two hypo to anechoic structures are observed, which measure 0.82 cm and 0.94 cm in diameter and 2.9 cm in length. They may be benign cysts containing fluid, a phlegmon or abscess. Neoplasia is considered less likely, but must also be considered. The surrounding mesenteric fat is severely hyperechoic, suggestive of saponification. These findings are highly suggestive of active pancreatitis.
IMAGING PERFORMED BY	
Dr. Mike Beard	A few hypoechoic nodules are noted throughout the hyperechoic mesentery surrounding the right kidney; 4.12 mm in diameter x 8.03 mm in length and 4.45 mm in diameter x 6.62 mm in length. Nodular hyperplasia or regeneration as well as lymphoid hyperplasia cannot be excluded, however, one cannot exclude neoplasia.
HOSPITAL NAME	
West Prince AH	The right limb is mildly and diffusely hypoechoic, however, its contours are smooth. The surrounding mesentery is hyperechoic. Punctate, hyperechoic foci, scattered throughout the parenchyma are noted.
REFERRING VET	
Dr. Stone	The left limb has a mildly coarse echotexture. Punctate, hyperechoic foci, scattered throughout the parenchyma are noted.
INVOICE	Other
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PATIENT *Abdominal effusion* is not visualized.

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ULTRASONOGRAPHIC FINDINGS

SPECIES

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- Pancreatitis is strongly suspected. The anechoic to hypo nodules observed in the body of the pancreas are likely cystic and benign in nature, however, differential diagnoses, such as a phlegmon, or abscess are possible. Neoplasia cannot be excluded. The hypoechoic nodules noted in the surrounding mesentery may be nodular or lymphoid hyperplasia, i.e. metastases are possible, but not a given.
- Cholestasis, suppurative cholangitis/cholangiohepatitis, and suppurative cholecystitis cannot be excluded. Early cholelithiasis cannot be excluded based on the acoustic shadowing in the gall bladder. Hepatic lipidosis may also be contributing to the hepatomegaly and diffuse and hyperechogenicity of the liver.
- Mild, subclinical inflammatory bowel disease cannot be excluded.
- The free floating sediment within the lumen of the urinary bladder is most likely composed of mucus, crystalline material and exfoliated cells. The debris is likely clinically insignificant given the lack of inflammatory changes to the bladder wall, however, findings should be correlated with clinical signs and a urinalysis.
- Signs of chronic renal disease are present, however, pyelonephritis is suspected. Glomerulonephritis or interstitial nephritis may also be contributing to some of the changes observed.

INTERPRETED BY

Lisa Carioto, DVM,
DVSc, Diplomate
ACVIM

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Treatment of pancreatitis is recommended, including analgesia for visceral pain (buprenorphine), anti-emetics, etc.

IMAGING PERFORMED BY

Dr. Mike Beard

A urine culture and sensitivity is recommended to exclude pyelonephritis.

HOSPITAL NAME

West Prince AH

Broad spectrum antibiotics, such as enrofloxacin, should be started pending the culture results. This should also help treat suppurative cholangitis/cholangiohepatitis and suppurative cholecystitis. If hyporexic or anorexic, cefovecin (Convenia), may be considered. Discussion with the client that this is not necessarily an ideal drug is suggested, however. If an improvement is observed, at least 2 additional doses are recommended 10-12 days apart.

Arterial blood pressure

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Dr. Stone

Treatment for pyelonephritis, including intravenous fluids

vitamin K administration to treat cholestasis (0.5 mg/kg SQ q8-12h for 1-3 doses)

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HOSPITAL NAME

West Prince AH

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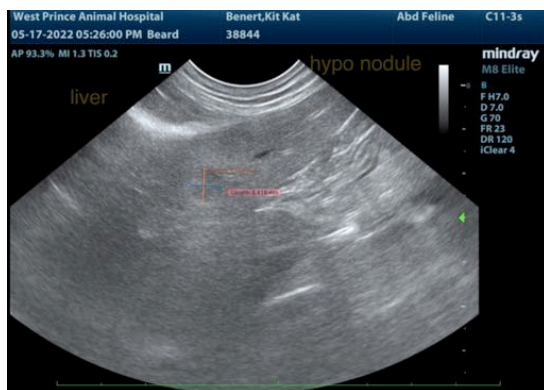
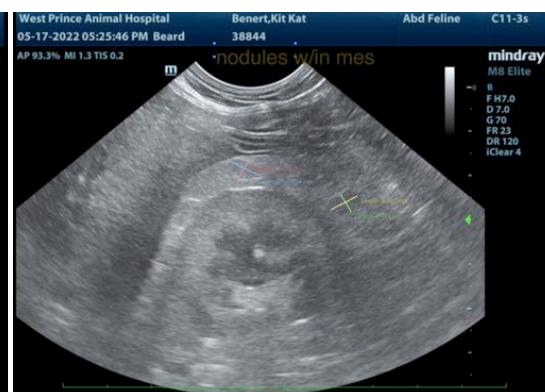
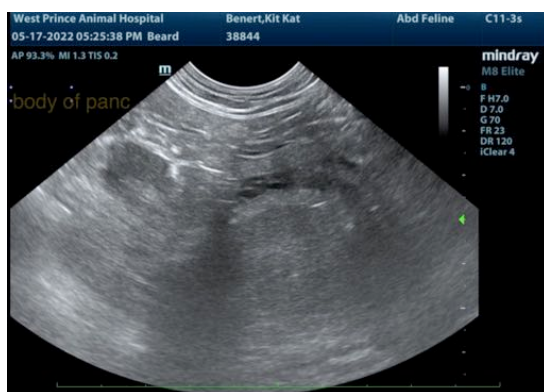
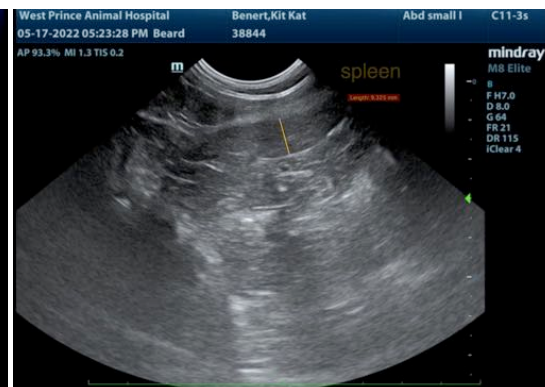
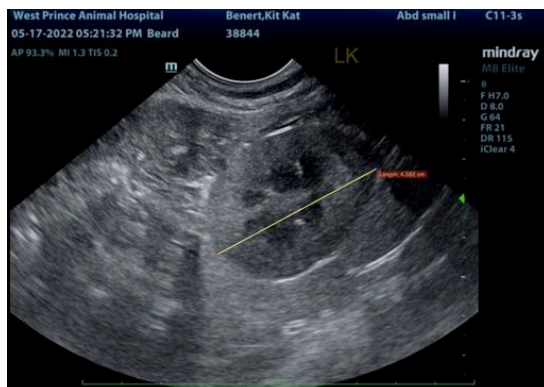
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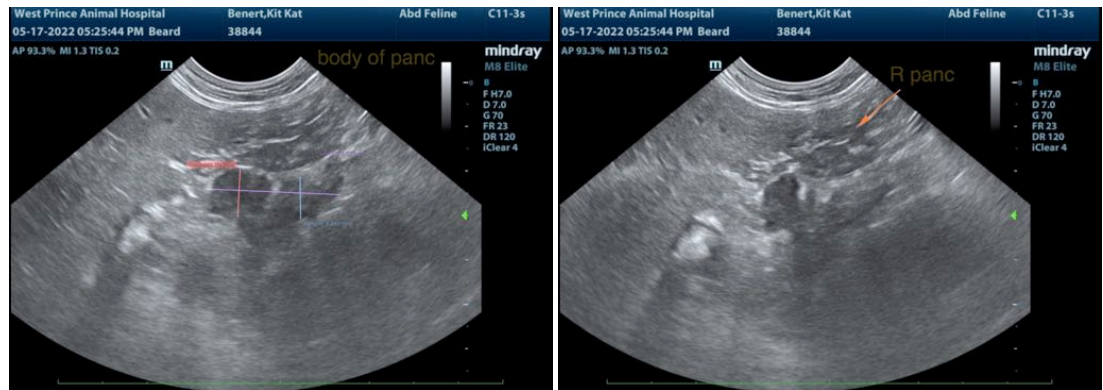
Dr. Stone

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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

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