



**PATIENT PRESENTING CLINICAL SIGNS**

**Jumbo Kim** History: Diabetic P, has not been regulated. Currently on 3.5 IU insulin (Vetsulin). Had diarrhea and inappetence a week ago.

**SPECIES** Abnormal PE/Chem/CBC/UA Results: PSL 573, ALT 129, ALP 5294, GGTP 42, GLUCOSE 473.

**Canine** The submitted study contained 9 videos and 24 still images for review.

**BREED ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN**

**Maltipoo Urinary System**

The urinary bladder was normal in size and tone. Mild to variably prominent urinary bladder walls were noted, exhibiting mild asymmetrical luminal surface contour. Anechoic content was present with no sediment or calculi. The urethra was normal to a depth of 2.0 cm. Aortic trifurcation was normal.

**SEX**

**Neutered Male** No overt pathology in the area of the residual prostate.

**AGE**

**11 Years 7 Months** Normal renal size with asymmetrical margination was present in both kidneys. The renal cortex presented uniformly increased in echogenicity with uniform echotexture. The renal cortex appeared to be hypertrophied resulting in an altered cortex: medulla ratio. Mild loss of corticomedullary distinction was also present. The renal medullary volume was subjectively reduced. No pyelectasia was noted. The left kidney measured 4.4 cm in length. The right kidney measured 4.1 cm in length.

**WEIGHT**

17.3

**Adrenal Glands**

The left adrenal gland was indistinctly visualized without overt pathology, subjectively measuring 1.8 cm length x 0.50 cm width.

**INTERPRETED BY**

**R. McKenzie Daniel,**  
DVM, DABVP  
(Canine and Feline) The right adrenal gland was not definitively visualized.

**Spleen**

The spleen exhibited primarily finely textured parenchyma which was hyperechoic to the liver and renal cortical parenchyma. Mild generalized parenchyma heterogeneity was present without evidence of nodular changes. The capsule was smooth and regular without apparent expansion. The splenic vasculature at the hilus was normal in volume with no evidence of congestion or thrombosis. The parenchymal heterogeneity is likely consistent with benign changes such as extramedullary hematopoiesis or age-related remodeling with minor potential for inflammatory or neoplastic disease.

**IMAGING PERFORMED BY**

Dr. Paul Kim

**HOSPITAL NAME**

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**Liver**

The liver exhibited mild to possible moderate enlargement with normal structure and contour. The liver parenchyma was mildly nonuniform and hypoechoic to the spleen with a moderate coarse echotexture and subjective mild to benign parenchymal remodeling. The hepatic and portal vasculature were normal in appearance without signs of congestion.

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Dr. Paul Kim

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**Gastrointestinal**



**PATIENT**

Jumbo Kim

The stomach presented mild wall thickening secondary to echogenic mucosa hypertrophy. Mild intact wall layering was maintained and distinct. The stomach contained luminal gas, along with a nonspecific area of shadowing ingesta. No evidence of mechanical pyloric outflow obstruction.

**SPECIES**

Canine

The small intestine presented intact wall layering with primarily maintained 1:3 muscularis/mucosa ratio with subjective propensity for mildly prominent segmental to generalized mucosa layer. No evidence of small intestinal mechanical/metabolic ileus.

**BREED**

Maltipoo

Normal visible colon wall layers were present with apparent formed feces in lumen.

**SEX**

Neutered Male

**Pancreas**

The pancreas was normal in size and contour with isoechoic to heterogeneous parenchyma compared to adjacent omentum. No signs of active inflammation or neoplasia.

**Free Abdomen**

No overt lymphadenopathy or peritoneal effusion was present.

**AGE**

11 Years 7 Months

**ULTRASONOGRAPHIC FINDINGS**

**WEIGHT**

17.3

- Mild cystitis pattern
- Nonspecific chronic renal changes
- Benign hepatopathy- suspect metabolic/reactive/vacuolar (diabetic) hepatopathy. Potential for concurrent inflammatory hepatopathy, i.e., cholangiohepatitis.
- Mild gallbladder debris (non-mucocele)
- Heterogenous pancreas- potential low grade or chronic pancreatitis. No sonographic evidence of active pancreatitis or pancreatic neoplastic criteria.
- Suspect inflammatory enteropathy with nonspecific shadowing gastric ingesta

**INTERPRETED BY**

R. McKenzie Daniel,  
DVM, DABVP  
(Canine and Feline)

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Urine culture and sensitivity on sterile urine sample, given the likelihood of glucosuria, is suggested. Screening hepatic FNA cytology, assuming normal clotting status, could be considered for further assessment. A GI panel to include PLI/TLI/Cobalamin/Folate is recommended. Hepatosupportive medications, including Denamarin and Ursodiol may prove beneficial.

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Dr. Paul Kim

**Potential Causes of Diabetic Dysregulation**

This is a suggestive checkoff list when faced with an unregulated diabetic patient:

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UTI

Dietary indiscretion/intolerance

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Pancreatitis

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Hyperthyroidism/hypothyroidism

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Exogenous steroids (including topical eye meds)

Cushing's



**PATIENT**

Acromegaly

Jumbo Kim

Owner compliance

**SPECIES**

Insulin quality issues

Canine

Antibodies to insulin

Underlying Neoplasia

**BREED**

Maltipoo

**SEX**

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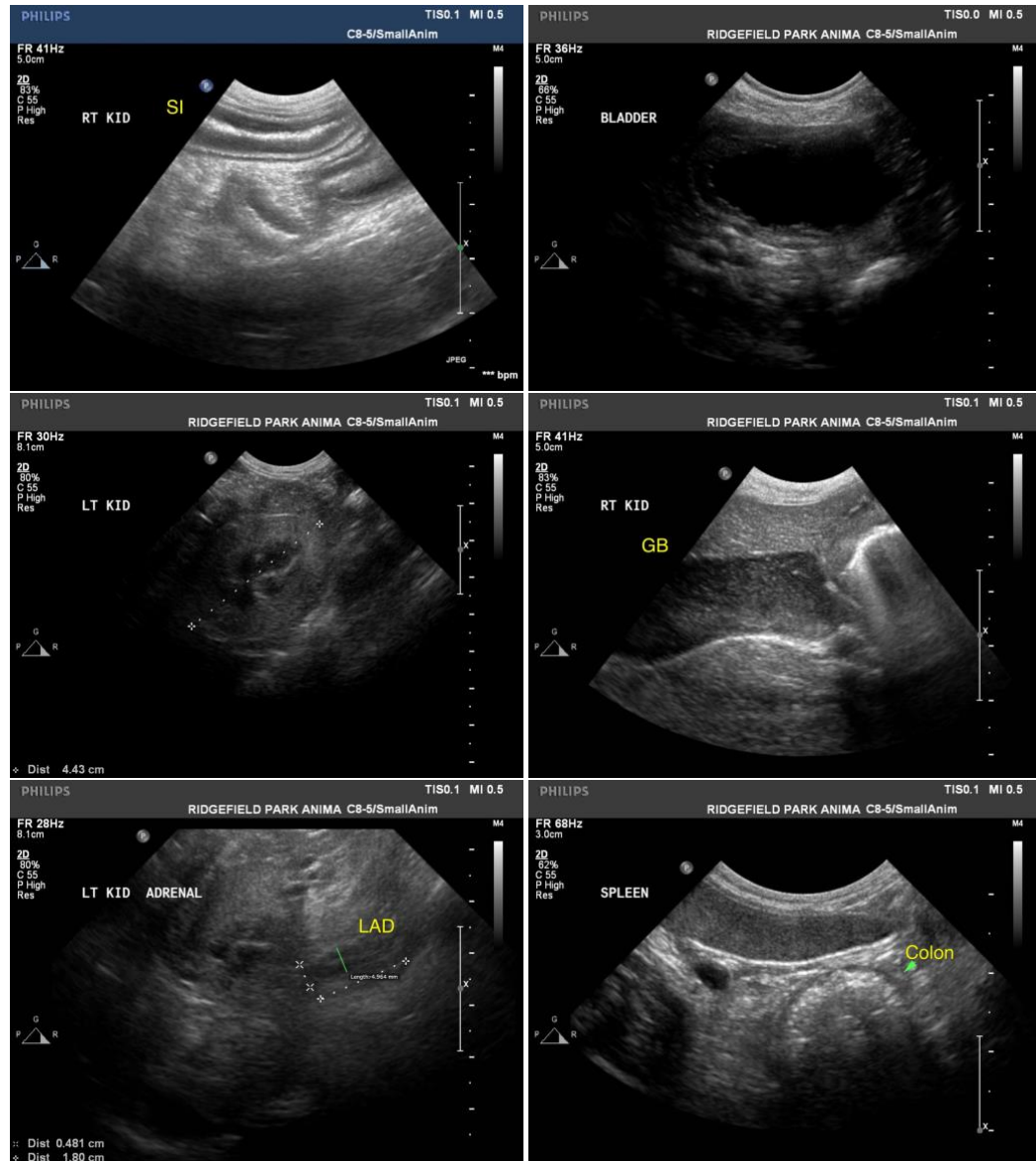
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**PATIENT**

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**SPECIES**

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**BREED**

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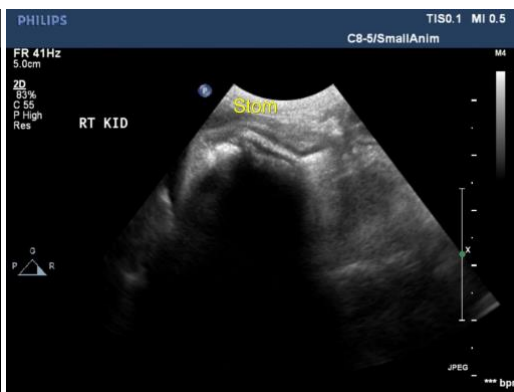
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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