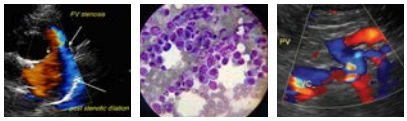
IMAGING PERFORMED BY

IntraPet.com



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**DATE**

2/10/23

**PATIENT**

Zed Bond

**SPECIES**

Feline

**BREED**

DSH

**SEX**

Neutered Male

**AGE**

4/29/21

**WEIGHT**

18.6 Pounds

**INTERPRETED BY**

Kathleen Sennello DVM, MS, Diplomate ACVIM (Small Animal Internal Medicine)

**HOSPITAL NAME**

Animal Emergency Hospital

**REFERRING VET**

Dr. Martinoli

**INVOICE**

45060

## PRESENTING CLINICAL SIGNS

First presented to AEH on 2/3 for partial urinary obstruction.
Stranguria week prior seen by rDVM was diagnosed with crystals in urine. Treated with prazosin, urinary diet. Patient very painful. Bloodwork PCV/TP: 32/9, BUN/CREA wnl, Lytes wnl. Hospitalized, urinary catheter placed - responded well to urinary treatment and was discharged 2/5
Returned on 2/7/23 to AEH for drooling, lethargy, lameness right forelimb, Poor appetite, Fever, Cellulitus noted on forelimbs. Admitted back into hospital. mild elevation in ALT, glu 273. Overnight - noted abnormal respiratory rate and effort - crackles noted. Stopped fluids - placed in oxygen. Lasix administered. Has been urinating. Fever improved 101.9. Cardiac ProBNP - Normal. Received onsior, convenia, orbax- concern for fluid overload vs reaction to medication. Weaned off oxygen, had been urinating, temp still fluxuating.

**Current Medications:** Convenia injection, azithromycin, Maropitant, ondansetron, Prazosin, gabapentin, Elura, cyproheptadine, Denamarin, Benadryl, KCL.
**Lab Results:** - PCV/TP: 44/10 --> 37/8.4 --> 37/7.4 --> 38/8.8 --> 43/9.4 - BNP: WNL 71.9.
- CHEM10: Glu 273, Kidney wnl, ALT 142
- Recheck ALT 2/8 1pm 153 --> 2/9 111 ALT
- Lytes: K 3.2 2/9.
**Radiographs:** Urinary bladder sludge, no obvious stones.
**Date of Previous IntraPet Ultrasound:** No previous.
**Sedation:** Not required to complete full diagnostic ultrasound.
**Stat Report:** Not requested.
**Imaging Performed By:** Andi Parkinson, RDMS.

## ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

### *Urinary System*

The urinary bladder is moderately distended with mild primarily suspended echogenic debris present. The Bladder wall, trigone, ureteral papillae and visible urethra (to a depth of 2cm) appear normal with no evidence of wall thickening, mucosal irregularities, masses or calculi. Echogenic debris of this type can be associated with small crystals, cellular debris and proteinaceous debris.

The left kidney has a normal shape and size (4.83 cm). Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

The right kidney has a normal shape and size (4.63 cm). Overall echogenicity is normal with adequate corticomedullary distinction and a typical 1:3 cortex:medulla ratio. There is no evidence of focal perinephric inflammation or effusion. There is no evidence of pyelectasia, nephroliths, infarcts or hydroureter. Renal vasculature is normal.

### *Adrenal Glands*

The left adrenal gland is normal in size measuring 0.50 cm at the caudal pole. It is observed in its normal position cranial to the left renal artery. It is normal in appearance (uniformly hypoechoic) and shape with no evidence of a mass effect.

The region of the right adrenal (between right cranial kidney and vena cava) is unremarkable, but the adrenal is not distinctly visualized. No evidence of a mass effect is visualized.

### *Spleen*
The spleen is subjectively normal in size (0.98 cm), echotexture is homogenous, and the splenic capsule is smooth with no irregularities. The blood flow through the hilus and splenic parenchyma appears normal. No focal parenchymal abnormalities are visualized.

### *Liver*
The liver is subjectively normal in size, and echogenicity with smooth peripheral margins. The parenchyma is homogenous echotexture. The visible portions of the vasculature and biliary tract appear normal. No focal nodules or cystic lesions are observed.

The gallbladder lumen is moderately distended. The wall of the gall bladder is not thickened and has a smooth mucosal surface. Luminal contents are mild and primarily anechoic. The cystic and common bile ducts are normal/not visible.

### *Gastrointestinal*
The stomach contains minimal luminal contents. It measures at a normal thickness of <0.36cm with some variability due to the presence of rugal folds. The distinction of the gastric wall layers is adequate and there is no impression of reduced peristaltic activity. No masses or focal lesions were observed.

The visualized areas of duodenum, jejunum and ileum have a relatively uniform diameter with minimal fluid distension. Wall thickness is normal. Bowel loops follow a curvilinear path with distinct wall layering maintaining the typical 1:3 muscularis:mucosa layer ratio. The duodenum measured as normal (between 0.13-0.38cm in wall thickness) and the jejunum measured as normal (between 0.15-0.36cm.) Visualized peristalsis appears appropriate. There were no focal lesions consistent with obstruction or a mass effect observed.

The ileocecal junction was visualized and exhibited normal intact wall layering and is subjectively of normal thickness. Sections of colon are visualized with formed fecal material and gas shadowing distally. There is no observed focal or generalized colon wall thickening or loss of layering.

### *Pancreas*
The pancreas is normal and isoechoic to surrounding mesentery. There is no evidence of nodules or cystic lesions. There is no evidence of regional mesenteric inflammation or fluid.

### *Free Abdomen*
Evaluation of the peritoneal cavity did not reveal any evidence of effusion, or subjective lymphadenomegaly. The Medial iliac nodes appear normal and there was no evidence of a caudal aortic thrombus at the bifurcation. The omentum is of normal uniform echogenicity.

### *Other*
The right auricle and pericardium were visualized and were unremarkable. No obvious pathology is visualized. If cardiac function evaluation is desired a full echocardiogram is warranted.

Ringdown artifact is seen at the level of the diaphragm.

## ULTRASONOGRAPHIC FINDINGS

- Echogenic debris in the urinary bladder – The echogenic debris in the bladder lumen could be consistent with cells, crystals, and/or mucus.

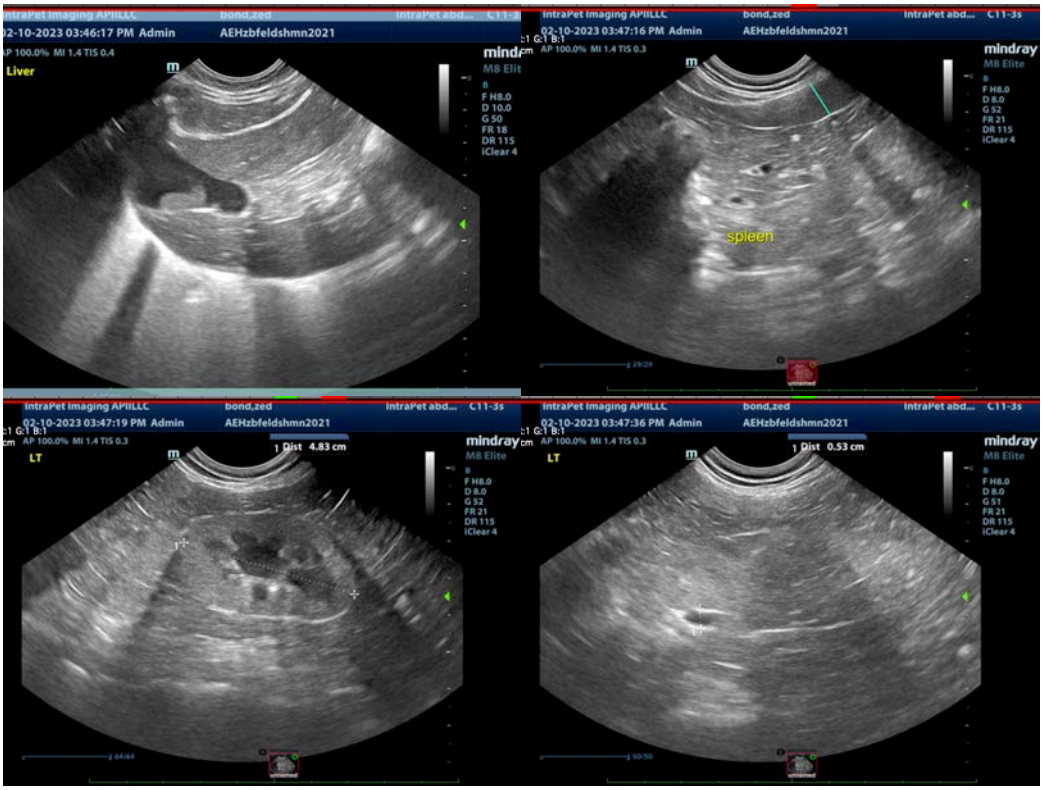
- Ringdown artifact at the level of the diaphragm – This can be seen with pulmonary parenchymal disease. Recommend 3-view thoracic radiographs.

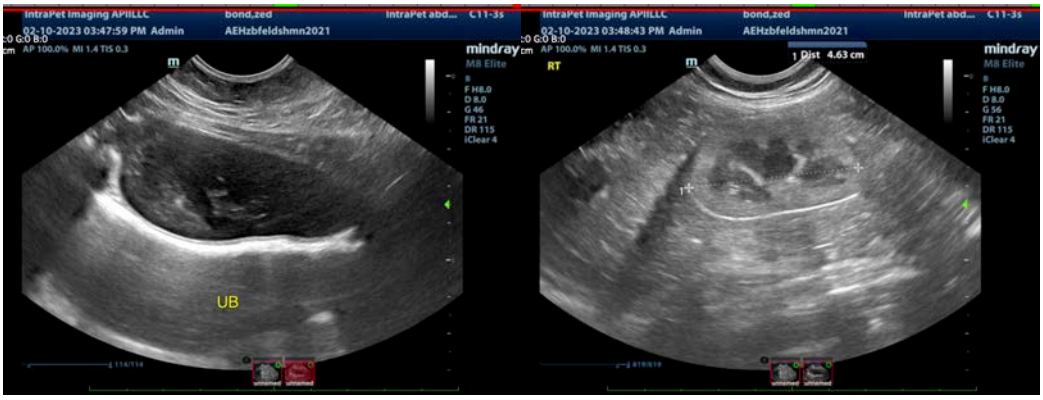
## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

There is a moderate to large amount of debris visualized in the urinary bladder. This could be consistent with mucus, crystals, etc. Correlate with abdominal radiographs. Recommend a urinalysis and culture, and if able to identify the type of crystals present, consider dietary therapy +/- catheterization and flushing out the urinary bladder if there is concern for re-obstruction.

There are subtle ringdown artifacts present at the level of the diaphragm. This combined with the history of respiratory difficulty is concerning for possible pulmonary changes. Recommend 3-view thoracic radiographs.

The correlation between the limb swelling and the urinary tract signs is difficult to identify (may not be related). Consider full cardiac ultrasound if there is concern for underlying cardiac disease and intolerance to fluids.






**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.

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