



PATIENT PRESENTING CLINICAL SIGNS

Kitzafrass General

SPECIES

Feline

BREED

DSH

SEX

MN

AGE

5yr

WEIGHT

4.48kg

INTERPRETED BY

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

IMAGING PERFORMED BY

Kelly Reschny

HOSPITAL NAME

Beattie Pet Hospital
Burlington

REFERRING VET

Hotten

INVOICE

14643ag

DATE

08/18/2023

June 8: Presented the first time with symptoms and was stabilized with KCl IV fluids, Metronidazole 5mg/ml Injections, Buprenorphine Injections, and Ampicillin ---- Dull/laterally recumbent occ giving the painful meow, mm slightly pale pink, crt 2s Prolonged skin tent, ~10% dehydrated Presented as walk in - upon assessment deemed urgent and o consented to urgent care Was normal yesterday, did give a new food overnight and looked like p ate some This morning woke up to p acting completely different - seemed painful, very lethargic. Meowing started as p got here. Was still moving around this morning, just very slow and hunched back NO known vomiting, diarrhea noted. Does go outdoors, but just the backyard and monitored. No lilies in the house, no known toxin in house but o unsure of outdoors Walked into room upon brief exam, mentioned to o p looks very critical and I am worried he is shutting down THe only thing I can get currently is p is dehydrated, and appears painful but cant locate ADvised need to get BW (w/ FeLV, FIV) and full body rads while we start p on IVF and pain meds. Upon discussion, o agreed on IVF and pain meds. If p is deteriorating despite these, O is planning on considering humane euth. If p unchanged, or perks up a bit after initial fluid bolus o would like to proceed starting with BW Confirmed P is a DNR June 28, 2023: Recheck QAR (was walking around in the room initially, as soon as I started my exam just layed on the table), mm slightly pale pink, crt <2s Mildly prolonged skin tent, >5% dehydrated? O mentioned p has been doing really well since discharge - walking well, eating, drinking well. Normal BM/U habits Finished all AB couple days ago. This am, seemed a bit off/quite so did give a dose of leftover buprenorphine July 13, 2023: Recheck QAR/nervous (almost looks lethargic in clinic but o mentioned p is running around back at home), mm slightly pale pink, crt <2s Normal skin tent, euhydrated Clinically p doing very well, back to 100% (or even more). E/D well, no V/D O has been getting all meds into P and p is taking it well. still gives the dose of buprenorphine at night as it seems to help p sleep better but in general o has no concerns with how p is doing Aug. 17: QAR, laterally recumbent, CRT<2S, MM pink, moist, Slight prolonged skin tent HR 192, RR 24, T 38.1 Grade 2/6 SHM P seems comfortable on abdominal palpation Bladder small. P hasn't eaten tonight Current Medications Metronidazole 10mg/kg BID IV, Buprenorphine 0.03mg/kg TID IV, Ampicillin 22mg/kg IV TID, Mirtazapine Transdermal Gel 2% 3.5cm SID

Abnormal PE/Chem/CBC/UA Results: K 3.1 LOW 3.5-5.8 mmol/L HCT 24.3 LOW 30.3-52.3 % RBC 6.45 LOW 6.54-12.20 x10¹²/L HGB 8.3 LOW 9.8-16.2 g/dL Radiographic Findings August 11, 2023: There is some pericardial fat which is incidental. The cardiac silhouette is of normal size and shape. The pulmonary vessels, the caudal vena cava and the aorta are of normal size and shape. The impression of a slightly more marked increased opacity in the left lung on the ventral dorsal view is most likely due to slight positional rotation and atelectasis, as suggested by the left mediastinal shift. No mediastinal mass or lymphadenopathy is identified. The esophagus and the trachea are radiographically normal. No lesion is detected in the pleural space. The stomach contains a small amount of gas. The small intestines are all of normal size and shape. The larger loops identified are consistent with the colon. They contain gas and some heterogeneous material compatible with feces. In the colon, there are multiple small mineral opacities. These are compatible with dietary indiscretion and are too small to cause an obstruction. There is a mineral opacities in the kidneys and the kidneys are borderline small. No lesion is detected in the liver, the spleen, and the urinary bladder. In the spine, incidental spondylosis deformans is identified. At the lumbosacral junction, there is disc space narrowing, endplate sclerosis and spondylosis deformans. This is compatible with lumbosacral disease. The vertebrae are normally aligned and no evidence of fracture is detected. No vertebral aggressive periosteal reaction or lysis is identified. There is mineralization in the cranial aspect of the right stifle joint. This is compatible with right meniscal ossicles. This is likely of limited current clinical significance given the reported history. The appearance of the kidneys is compatible with chronic nephropathy. No additional lesion is identified in the abdomen. However, significant additional intra-abdominal organ lesions (including pancreatitis) or dysfunctions could be underestimated based on survey radiographs due to limited sensitivity. There is suspicion for lumbosacral disease. However, survey radiographs often have limited accuracy to determine if or where spinal cord or nerve root compression is present.



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Additionally, other spinal lesions such as disc disease at other sites, intradural or intramedullary lesions cannot be excluded based on survey radiographs. No lesion is detected in the thorax.

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN AND HEART

SPECIES

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FELINE CARDIAC PARAMETERS	BODY WEIGHT (kg)	HR (BPM)	IVSd (cm)	LVIDd (cm)	LVWd (cm)	FS (%)	EF (%)
NORMAL PARAMETER	-----	150-240	0.3-0.6	1.0-2.1	0.25-0.6	35-67	80-100
PATIENT		202	0.61	1.35	0.6	56	90
FELINE CARDIAC PARAMETERS	LA/AO (Boon)	LA/AO HEART BASE (Sisson)	LA 2D 4-chamber long axis AS to FW (Sisson) (cm)	LVOT VEL. (m/s)	RVOT VEL. (m/s)	IVRT (m/)	
NORMAL PARAMETER	<1.5	0.88-1.79	0.7-1.7	<1.6	<1.3	40-60	
PATIENT	1.3	1.3	1.3		0.86		
Adapted from June Boon, Veterinary Echocardiography, 1998 Sisson D et al. JVIM 1991; 5: 232, Jacobs et al. Am J Vet Res 1985; 46:1705							

WEIGHT

4.48kg

Cardiac Presentation

The echocardiogram in this patient demonstrated normal left atrial size based on 3 separate LA measurements. The cranial and caudal mitral valve leaflets presented normal linear structure and kinetics. No overt MR present on Doppler. The left ventricle presented borderline increased thicknesses with linear contour and was not dilated nor restricted. The myocardium presented normal echogenicity without subjective evidence of significant fibrotic or ischemic disease. The contractility of the ventricular walls was adequate and in normal range for this patient evidenced by the fractional shortening measurement and subjective evaluation of the different regions and angles of the myocardium. The left ventricular outflow tract demonstrated subjective mild dynamic/turbulent flow with normal structural integrity. The right atrium and auricle revealed normal size, structure and content. No evidence of masses was noted or chamber overload. Tricuspid valvular assessment demonstrated adequate linear morphology and kinetics. No overt TR present on Doppler. The right ventricle was of normal size (1/3 diameter of LV), chordae structure, myocardial echogenicity and thickness. Pulmonic tract assessment revealed normal valve structure, laminar flow, and diameter (approx. 1:1 pa/ao ratio). Normal measured RVOT velocity was present. No visible pericardial or free pleura fluid was noted or extra cardiac pathology in the visible planes. The cranial mediastinum and pericardial regions were free of masses in the visible window.

Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2 cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with no uroliths or sediment. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes were noted.

Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio and adequate corticomedullary definition were maintained. The echogenicity of the cortex was mildly

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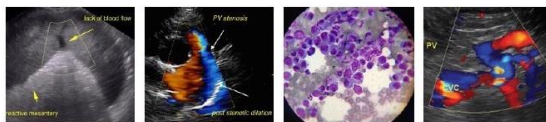
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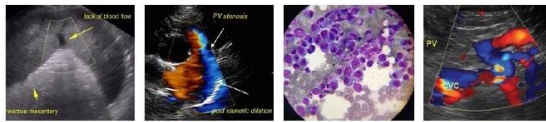
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PATIENT	increased. Minor medullary mineral was present. No pyelectasia. The left kidney measured 3.5 cm in length. The right kidney measured 3.9 cm in length.
Kitzafrass General	The area of the aortic trifurcation was free of pathology.
SPECIES	Adrenal Glands
Feline	The left and right adrenal glands were not definitively visualized. No obvious pathology was present in the area of the bilateral adrenal glands.
BREED	Spleen
DSH	The spleen exhibited a finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. 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. Acute to chronic inflammatory, neoplastic, or benign parenchyma changes were not noted.
SEX	
MN	Liver/Gallbladder
AGE	The liver was subjectively mildly enlarged with rounded symmetrical contour and generalized non-homogenous mildly increased parenchyma echogenicity. A solitary non-disruptive ventral intraparenchymal nodule was present measuring 1.6 cm in diameter. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was non-distended in size with thin walls and primarily anechoic luminal content. The cystic and common bile ducts were normal.
5yr	
WEIGHT	Gastrointestinal
4.48kg	The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach was empty with no signs of ileus, obstruction or foreign material. The gastric body wall measured 0.24 cm in width.
INTERPRETED BY	The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. The lumen of the small intestine was empty with no signs of ileus, obstruction or foreign material. The duodenum wall measured 0.23 cm width. The jejunum wall measured 0.23 cm width. The ileocolic wall measured 0.36 cm width.
R. McKenzie Daniel, DVM, DABVP (Canine and Feline)	Normal visible colon wall layers were present with apparent formed feces in lumen.
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HOSPITAL NAME	Pancreas
Beattie Pet Hospital Burlington	The left pancreatic limb exhibited normal size with capsule asymmetry and non-homogenous mildly cystic parenchyma. Within the area of the pancreas base a moderately sized thinly walled pancreatic cyst exhibiting distal acoustic enhancement and anechoic content measuring 1.8 cm in diameter was present. No evidence of regional omental inflammation was visualized.
REFERRING VET	Free Abdomen
Hotten	No omental masses, overt lymphadenopathy or peritoneal effusion was present.
INVOICE	
14643ag	ULTRASONOGRAPHIC FINDINGS
DATE	<ul style="list-style-type: none"> • Borderline thickened LV wall with normal myocardial echogenicity. • Normal LA/RA.
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- Non-specific mild chronic renal changes.
- Subjective mild hepatomegaly with mild non-homogenous focally nodular parenchyma.
- Non-homogenous mildly cystic left pancreatic limb with pancreatic cyst in the area of the pancreas base.
- Sonographically unremarkable GI tract.

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

BREED

DSH

The cardiac appearance may suggest emerging hypertrophic cardiomyopathy which would be a rule out diagnosis once the patient is deemed euthyroid and normotensive. The lack of atrial enlargement indicates that the risk of complication is low. No indication for cardiac medications. Assessment of T4 and systemic BP to rule out complicating factors is suggested.

SEX

MN

Assessment for evidence of cranial abdominal/subxiphoid discomfort on palpation which may allude to low grade pancreatitis is recommended. Sonographically the pancreatic cystic changes appear to be benign without neoplastic or abscess criteria.

AGE

5yr

Assuming normal clotting status and using a 25g needle, a hepatic parenchyma and nodule FNA for screening cytology is warranted for further assessment given no evidence of reported hepatic enzyme elevations.

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The hypokalemia in this patient may be secondary to decreased caloric intake. A definitive cause of the anemia was not obvious. If there is evidence of hypertension, further assessment may include screening aldosterone and cortisol level to assess for non-obvious adrenal disease specifically if persistent hypokalemia or fluctuating potassium level.

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For an additional charge, internal medicine consult can be utilized through SonoPath.com. You can select the internal medicine drop down at <http://spa.sonopath.com/>.

One of the world's top internists & SonoPath associate Dr. Remo Lobetti BVSc, MMedVet, PhD, DECVIM can evaluate your case through SonoPath. <https://sonopath.com/resources/sonopath-services/internal-medicine-teleconsultation-services>

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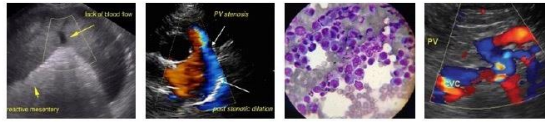
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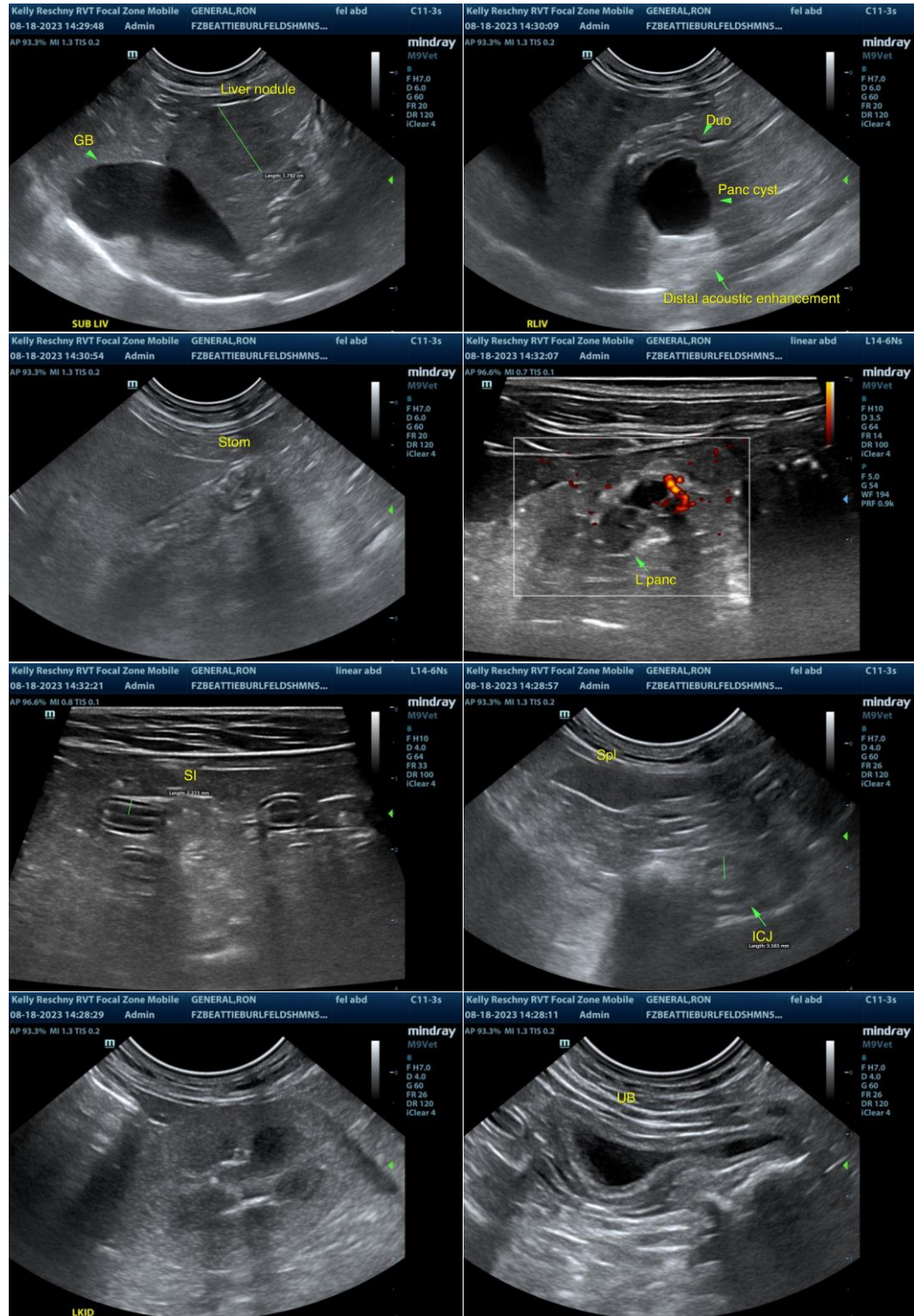
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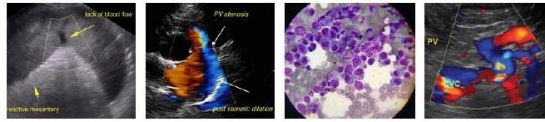
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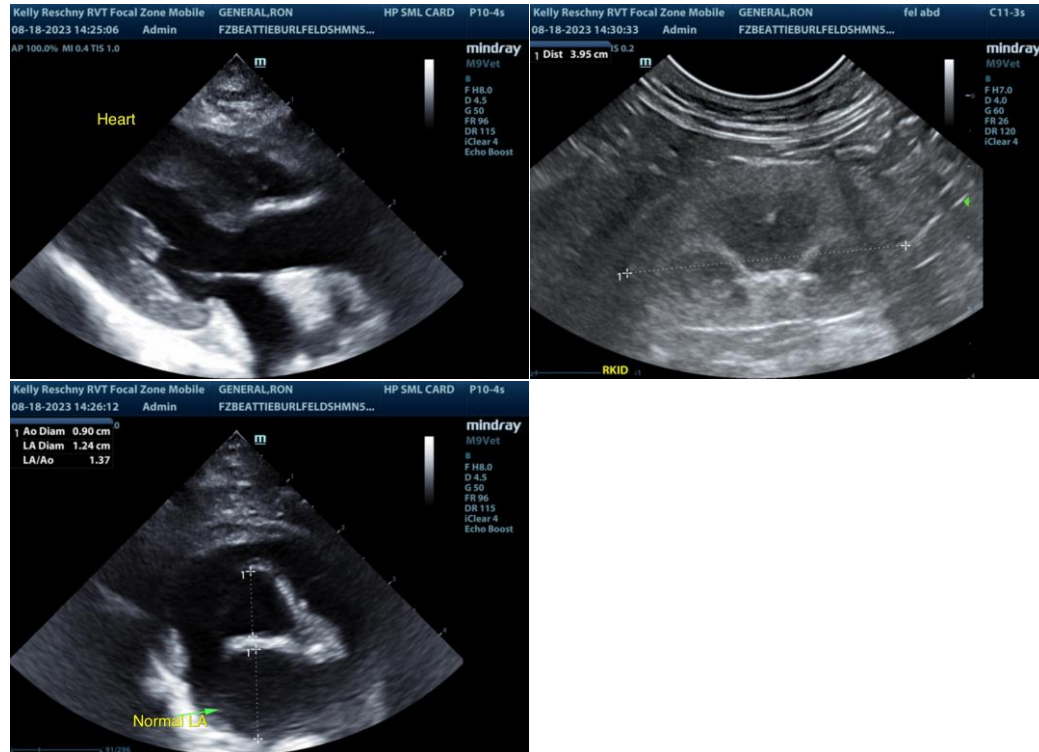
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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