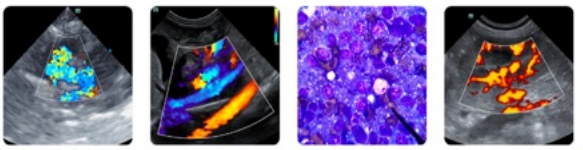




SonoPath www.thefocalzone.com info@thefocalzone.com 289.808.2608

**PATIENT**

Wuyue Cui

**SPECIES**

Feline

**BREED**

British Shorthair

**SEX**

Spayed female

**AGE**

4 years

**WEIGHT**

4.99 kg

**INTERPRETED BY**

Bradley Harris, DVM, DACVECC, DACVIM (cardiology)

**IMAGING PERFORMED BY**

Kelly Reschny

**HOSPITAL NAME**

East Credit VH

**REFERRING VET**

Dr. Jerabek

**INVOICE**

68295

**DATE**

11/4/25

## PRESENTING CLINICAL SIGNS

History: Grade 3-4/6 murmur - pansystolic - as per owner was heard previously, but unsure of grade Lab work done - Ca: 3 (2.2-2.7) - idiopathic vs renal (no elevations noted vs paraneoplastic) No obvious changes on blood work to explain murmur From China 2 years ago Current Medications OFA daily, Q10 Abnormal PE/Chem/CBC/UA Results: Please see attached labs ionized parathyroid pending

## ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN

### *Urinary System*

The urinary bladder, trigone, and pelvic urethra are unremarkable with normal wall thicknesses and normal tone. The ureters were not visualized, which is a normal finding. There are no uroliths or sediment noted, and anechoic urine is present. The ureteral papillae appear normal. There is no evidence of inflammatory, infiltrative, or neoplastic disease.

The kidneys are normal in size and structure, with appropriate corticomedullary definition and cortex to medulla ratio. The cortices are uniform in texture with normal echogenic relationship to liver and spleen. The medullary structure differed distinctly from the cortex and no evidence of pyelectasia is present. The capsules are uniform without significant irregularities noted. The left kidney measured 3.75 cm. The right kidney measured 3.76 cm.

### *Adrenal Glands*

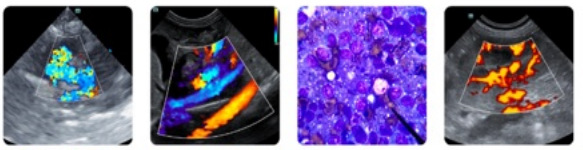
Both adrenal glands are visualized and have normal shape, size, position and echogenicity for this breed. The phrenic vasculature, glandular echogenicity and detail were unremarkable. Capsule, cortex, and medullary definition were normal for this age patient. The left adrenal gland measured 0.25 cm and the right adrenal gland measured 0.24 cm.

### *Spleen*

The spleen measured 0.96 cm at the hilus and subjectively prominent with a slightly irregular capsular contour. The parenchyma is homogenous and hyperechoic to the liver and renal cortices. The splenic vasculature is normal without signs of congestion, spontaneous echo contrast, or thrombosis.

### *Liver*

The liver is subjectively normal liver size, contour, and structure. Parenchymal echogenicity is naturally coarse and hypoechoic to the spleen. Vasculature is within normal limits with no evidence of congestion. The gallbladder has thin walls with contains anechoic bile. There is no evidence of intra- or extra-hepatic biliary dilation. The cystic and common bile ducts were normal. No hepatic lymphadenopathy is documented. There is no overt structural evidence of inflammatory, infiltrative or regenerative pathology evident.





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### *Gastrointestinal*

The stomach and intestines are free of stasis and peristaltic activity, with no significant dilation noted. There is normal wall thickness and acceptable curvilinear mural detail. The pyloric-duodenal junction and ileocecocolic junction are patent, and the colon contains normal shadowing feces. There is no evidence of shadowing obstructive material or overt infiltrative disease noted. No associated abnormal lymphatic activity is documented.

### *Pancreas*

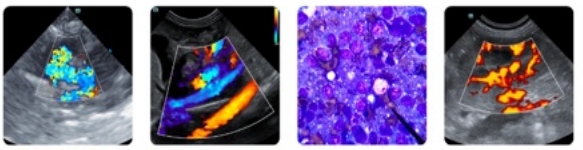
The base and limbs of the pancreas are isoechoic to surrounding omental fat. The pancreatic duct and capsular contour are normal. There is no overt evidence of active inflammatory or neoplastic disease.

### *Free Abdomen*

There is no evidence of abdominal lymphadenopathy. No free fluid was noted. There are no overt mass effects noted.

## ULTRASONOGRAPHIC EXAMINATION OF THE HEART

The left atrium is moderately enlarged. There are no distinct left atrial thrombi/clots or spontaneous echo contrast appreciated. The left ventricle is normal in dimension, with concentric hypertrophy, and no evidence of restriction. Left ventricular systolic function is normal, based on fractional shortening and systolic left ventricular dimensions. The right atrium and ventricle are subjectively normal in dimension and systolic function. There is evidence of systolic anterior motion of the mitral valve with moderate mitral regurgitation. The tricuspid valve leaflets presented normal linear structure, extension in systole, and union in diastole without regurgitation. The left ventricular outflow tract demonstrated turbulent flow and subjective structural valvular integrity. The visible aorta is unremarkable. Pulmonary outflow tract assessment revealed normal valve structure, laminar flow, and appropriate diameter and distensibility. There is no evidence of semilunar valve insufficiency or pulmonary hypertension documented. There is no visible pericardial, pleural, or free peritoneal fluid noted.





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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** | 4.99 | 120 | 0.62 | 1.77 | 0.7 | 31 | 72 |
| **FELINE CARDIAC PARAMETERS** | **LA/AO** (M-mode) | **LA/AO HEART BASE** (Sisson) | **LAD** LA MAX 4 Chamber | | **LVOT VEL.** (m/s) | **RVOT VEL.** (m/s) | **IVRT** (m/) |
| **NORMAL PARAMETER** | <1.5 | 1.6 | 0.7-1.7 | | <1.6 | <1.3 | 40-60 |
| **PATIENT** | NM | 1.68 | 2.04 | | 1.4 | 1.2 | NM |
| Adapted from June Boon,Veterinary Echocardiography,1998<br>Sisson D et al. JVIM 1991; 5: 232, Jacobs et al. Am J Vet Res 1985; 46:1705 | | | | | | | |

## ULTRASONOGRAPHIC FINDINGS

- The spleen appears slightly prominent and measures at the upper limits of normal with a slightly irregular capsule. This may represent a normal variant for this patient. However, given the hypercalcemia an infiltrative round cell neoplasia cannot be definitively excluded.
- These findings identify left ventricular hypertrophy in the setting of an outflow tract obstruction, consistent with hypertrophic obstructive cardiomyopathy (HOCM). As a consequence of the heart disease, the left atrium is also enlarged.

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Fine needle aspirates of the spleen with cytology are recommended. A coagulation profile and platelet estimate prior to sampling are indicated to ensure the absence of coagulopathy. Occasionally some tissues are poorly exfoliative, or cytology is non-specific, in which case biopsy with histopathology may be required for a definitive diagnosis.

There are multiple layers of uncertainty regarding this case. The presence of hypertrophy and an outflow tract obstruction make the use of a beta blocker worth considering. The challenge of treating these cats is the lack of any real data to support a meaningful benefit (most of the rationale for their use is theoretical), coupled with the potential for adverse effects (low BP, renal impairment, potential exacerbation of CHF). If atenolol is used, the atenolol dose would be 6.25mg once daily (with the potential of increasing to BID if tolerated well in the first few weeks). Given the presence of significant left atrial dilation, beta-blockers are recommended at this time. However, beta blockers do have the potential to worsen hemodynamic function, which is more of a concern in the setting of left atrial dilation. In these cases, the concurrent use of an ACEi (enalapril/benazepril 2.5mg q24hr) is recommended as well. Additionally, Plavix/clopidogrel should be initiated as an anti-thrombotic (1/4 of a 75 mg tablet, or 18.75 mg PO q 24 h). Due to the bitter taste of this medication, it may be best to place it in an empty gelatin capsule or use products such as a Pill Pocket. A recheck heart rate, BP, and chemistry would be indicated 1-2 weeks after starting therapy; at that time the need for higher doses of atenolol can be assessed. A repeat echocardiogram, thoracic radiographs, blood pressure, and chemistry panel is warranted in another 6 months. Owners should monitor resting respiratory rate at home.

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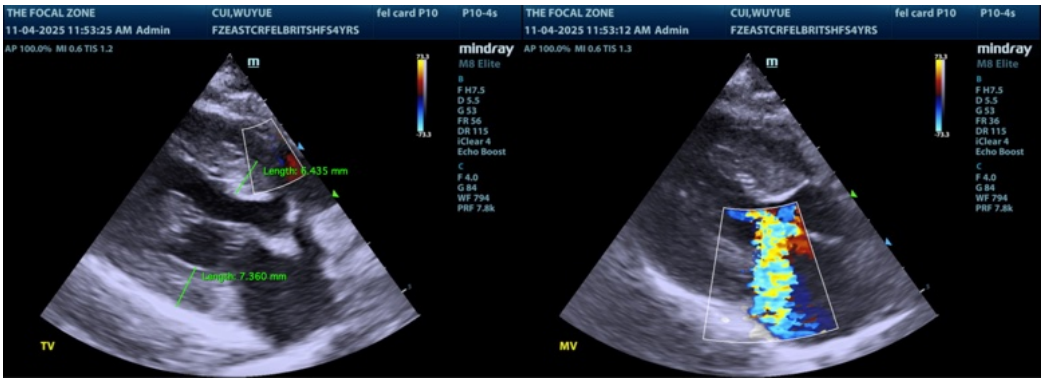
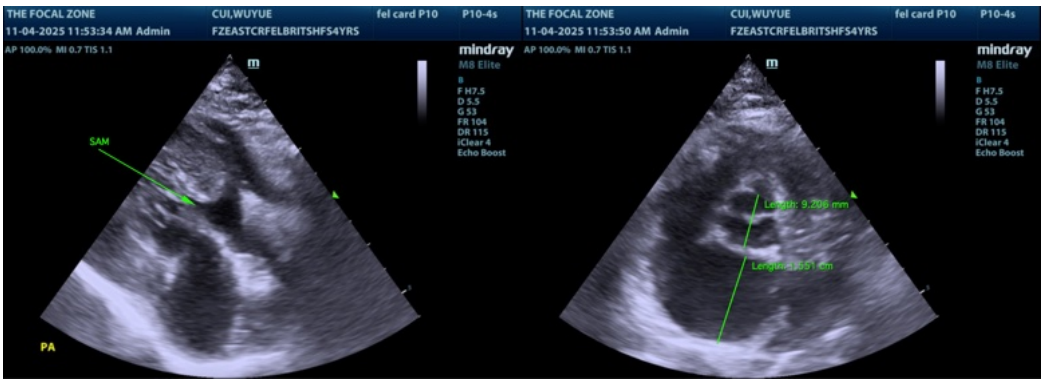
Values above 30 breaths/minute or an increase in respiratory rate 10% above baseline should prompt veterinary re-evaluation.

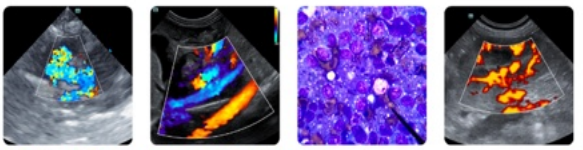
Anesthesia considerations:
While there is no CHF present, there is likely an increased anesthetic risk which must be considered prior to any anesthetic procedure. If anesthesia is necessary, then alpha-2 agonists, ketamine, high dose acepromazine, and Telazol should be avoided. If an ACE inhibitor (enalapril, benazepril) or beta-blocker (atenolol) is being given, it should not be administered on the morning of general anesthesia. Other cardiac medications should be administered per the normal dosing schedule. Fluid therapy during anesthesia should be considered at a reduced rate (e.g., 2-3 ml/kg/hour) if possible (i.e., if not hypotensive). A shorter anesthetic duration will reduce the risk of complications. Pre-oxygenation is advised. Premedication with an opioid (i.e., butorphanol, hydromorphone, oxymorphone) with or without a benzodiazepine is generally the safest protocol. An induction agent such as Propofol, alfaxalone, or diazepam/etomidate can be used to effect. Maintenance of anesthesia with isoflurane or sevoflurane is reasonable.

Diet:
No special considerations are necessary. Any high-quality food from Hills, Royal Canin, Science Diet, Eukanuba, Iams, or Purina is reasonable.

Activity:
Avoid overly strenuous activity.







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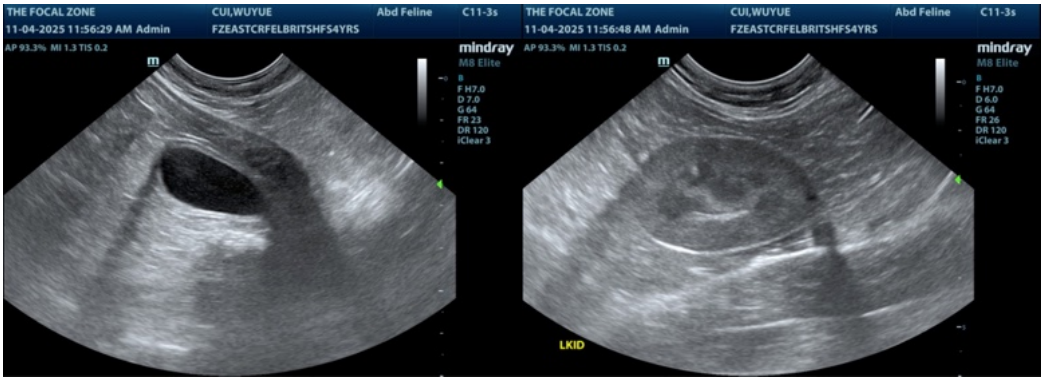


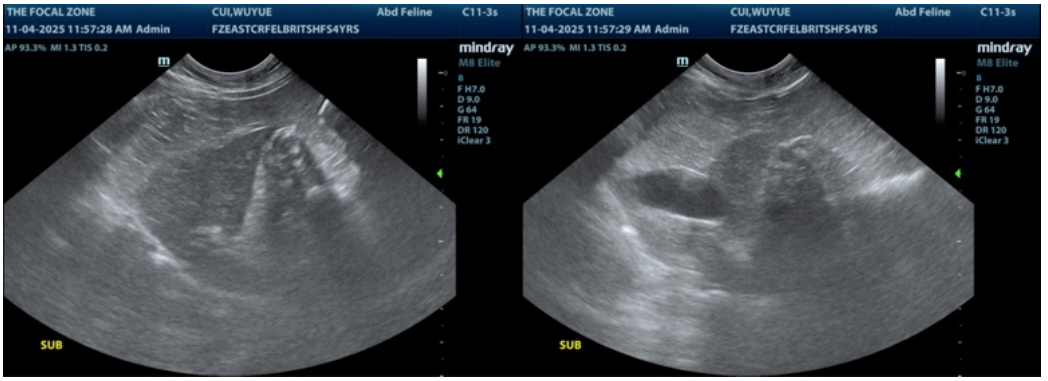


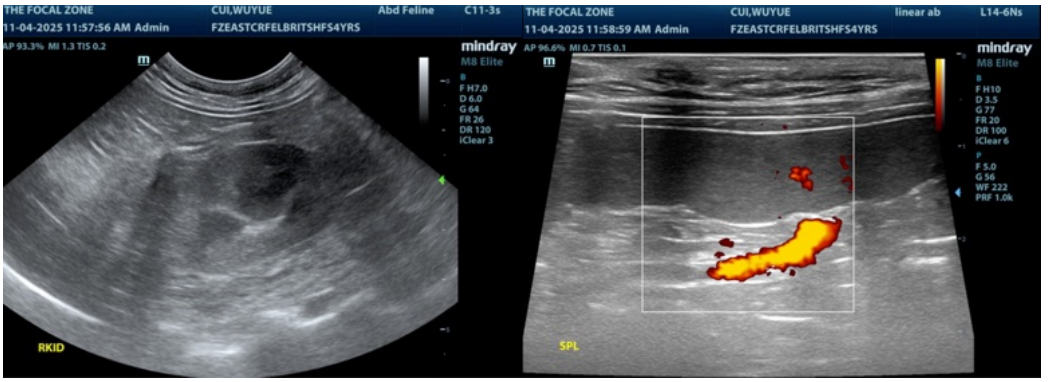


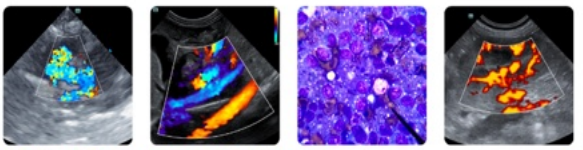



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**The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.**

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.

Bradley Harris, DVM, DACVECC, DACVIM (cardiology)

info@SonoPath.com