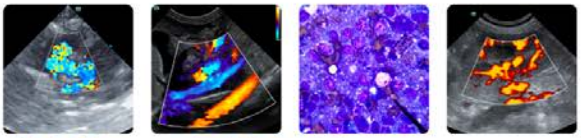

PATIENT

Jilly Paone

SPECIES

Feline

BREED

DLH

SEX

Spayed Female

AGE

13 Years 8 Months

WEIGHT

7.7 lbs

INTERPRETED BY

Brad Harris, DVM, DACVECC, DACVIM (cardiology)

IMAGING PERFORMED BY

Shari Reffi, CVT

HOSPITAL NAME

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REFERRING VET

Dr. DeMeo

INVOICE

72867

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12/30/25

PRESENTING CLINICAL SIGNS

Clearance for anesthetic procedure (dental). Echo for elevated ProBNP; assess palpated abdominal abnormalities. Weight loss, hematuria, heart murmur, vocalizing, possibly blind. Hypercalcemia, neutrophilia. No current medications.

Abnormal PE/Chem/CBC/UA Results: Ca 12.2; elevated WBC w/predominant neutrophilia. T4 2.4; Free T4 53.2. ProBNP 189 (RR up to 100). UA: PH 8; 2+ protein; occult blood w/RBC. USG: 1.034

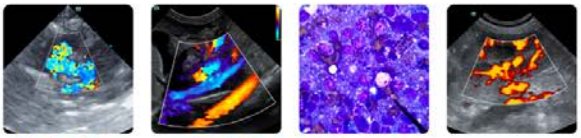
ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

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	3.5	NM	0.64	1.42	0.64	74	NM
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	1.39	1.53	1.5		1.2	1.1	NM

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

Cardiac Presentation

The left atrium is normal in dimension. There are no distinct left atrial thrombi/clots or spontaneous echo contrast appreciated. The left ventricle is normal in dimension, with mild concentric hypertrophy, and no evidence of restriction. Left ventricular systolic function is normal, with adequate contractility 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 mild to 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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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 is a mild amount of suspended echogenic mobile debris. The ureteral papillae appear normal. There is no evidence of inflammatory, infiltrative, or neoplastic disease.

The kidneys are normal in size. The cortices are hyperechoic with a loss of corticomedullary distinction. There are mild cortical cystic changes noted bilaterally. The cortex to medulla ratio is appropriate with no significant pyelectasis or pelvic dilation. However, shadowing nephrolithiasis is noted within the renal pelvis as well as mild dystrophic mineralization. The left kidney has a hypoechoic triangular lesion within the cortex, consistent with a chronic or histortic infarct. The renal capsules are irregular bilaterally. Left measures 2.45 cm. Right measures 2.98 cm.

Adrenal Glands

The left adrenal gland is visualized and has 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. Left adrenal measures 0.37 cm.

The right adrenal gland is not visualized.

Spleen

The spleen measures 0.85 cm at the hilus. It is smooth with homogeneous parenchyma and hyperechoic to liver and renal cortical parenchyma. The capsule is without noticeable irregularity or deformation. The splenic vasculature is normal without signs of congestion, spontaneous echo contrast, or thrombosis. No evidence of acute or chronic inflammatory, neoplastic, or infarct are documented.

Liver

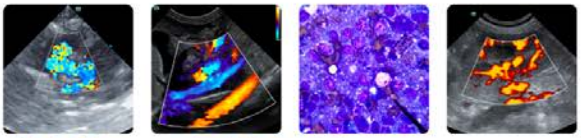
The liver is subjectively normal liver size, contour, and structure. Parenchymal echogenicity is naturally coarse and hypoechoic to the spleen. Vasculature is within normal limits with no evidence of congestion. The gallbladder has thin walls which contain anechoic bile. There is no evidence of intra- 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.

Gastrointestinal

The gastrointestinal tract is non-distended with no significant dilation, and adequate peristaltic activity. There is no shadowing foreign material or concern for a mechanical gastrointestinal obstruction. There are focal regions of the stomach and small intestine with prominent muscularis layer that distort the normal 1:3 muscularis to mucosal ratio. The small intestinal submucosa is also hyperechoic and mildly irregular. There is mild gastric mucosal irregularity noted. The colon contains normal shadowing feces.

Pancreas

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



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Free Abdomen

No overt lymphadenopathy or peritoneal effusion was present.

ULTRASONOGRAPHIC FINDINGS

- The cardiac findings identify left ventricular hypertrophy in the setting of an outflow tract obstruction and absence of any chamber dilation, consistent with occult hypertrophic obstructive cardiomyopathy (HOCM).
- The urinary bladder contains echogenic, suspended debris contrasted with anechoic urine. This is often related to urinary tract infection but may represent exfoliated debris or sterile inflammation.
- There is increased renal cortical echogenicity and thickening with a mildly irregular capsular contour. Multifocal cystic cortical changes are noted. This is secondary cystic formation consistent with degenerative changes and remodeling. There is no evidence of abscessation or suspicion of neoplasia. Dystrophic mineralization was noted and is non-obstructive at this time, with no evidence of pylectasis.
- The intestinal submucosa is slightly irregular, thickened and hyperechoic suggestive of low grade, chronic disease. There is mild uniform prominence of the gastric mucosa as well as areas of "ropey" small intestinal wall with slight disruption of the normal 1:3 muscularis/mucosal ratio. This is most consistent with chronic enteropathy. No concerning lymphadenopathy or evidence of mechanical obstruction is present. Chronic inflammatory bowel disease is likely with a low possibility of an early neoplastic event such as lymphoma.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Urinalysis and, if indicated based on urinalysis results, urine culture is recommended. If protein is present in an otherwise quiet sediment, protein quantification with a urine protein to creatinine ration is recommended.

A gastrointestinal panel (TLI, PLI, B12, folate) via Texas A&M gastrointestinal laboratory is indicated to further evaluate for potential chronic enteropathy. Ultimately, gastrointestinal biopsies may be required for a definitive diagnosis.

An ionized calcium is recommendled to further evaluate the mild total hypercalcemia.

Cardiac Recommendations/Treatment:
The presence of hypertrophy and an outflow tract obstruction make the use of a beta blocker worth considering. However, 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). 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 echo is warranted in another 6 months, regardless of whether or not therapy is started. Ultimately, a conversation with the owner is necessary to determine what course of therapy is most suitable for them. Regardless, owners should monitor resting respiratory rate at home. Values above 30 breaths/minute or an increase in respiratory rate 10% above baseline should prompt veterinary re-evaluation.

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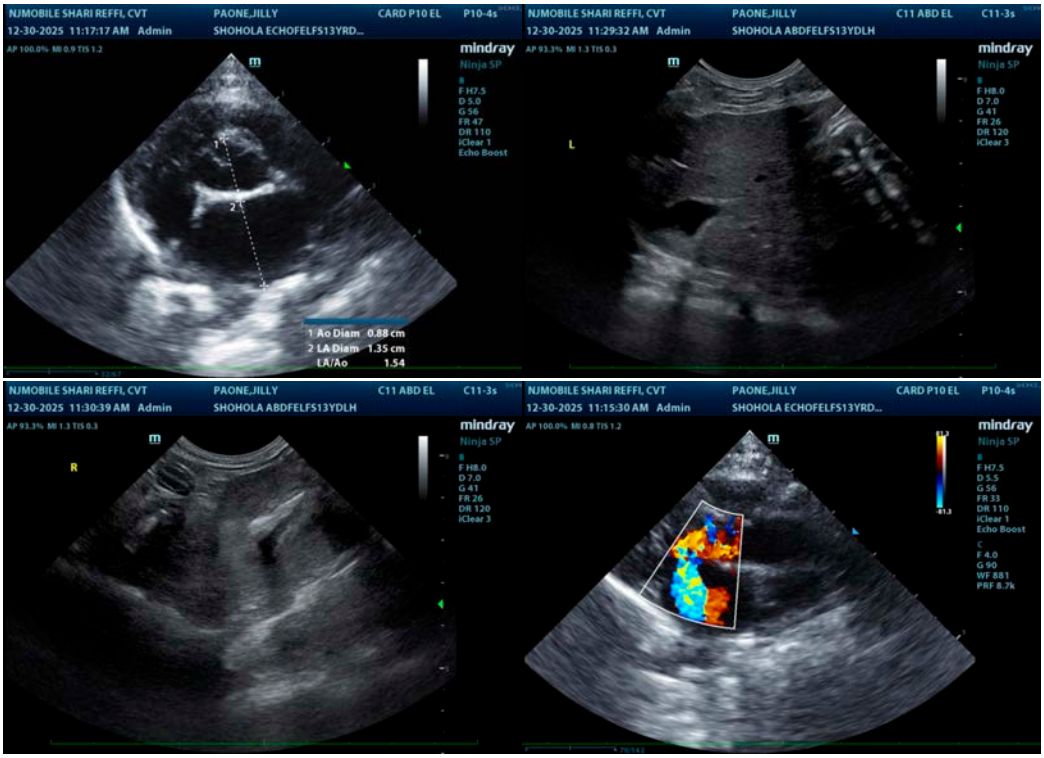
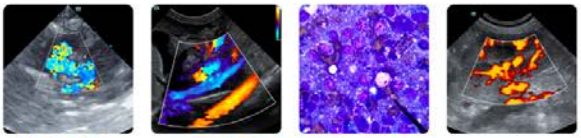
Anesthesia considerations:
If anesthesia is necessary, then alpha-2 agonists, ketamine, high dose acepromazine, and Telazol should be avoided. If a beta-blocker (atenolol) is being given, it should not be administered on the morning of general anesthesia. Other cardiac medications should be administered per the normal dosing schedule. Fluid therapy during anesthesia should be considered at a conservative rate (e.g., 5 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 or alfaxalone 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.



New Jersey Mobile
FUELED BY SONOPATH VETERINARY ULTRASOUND



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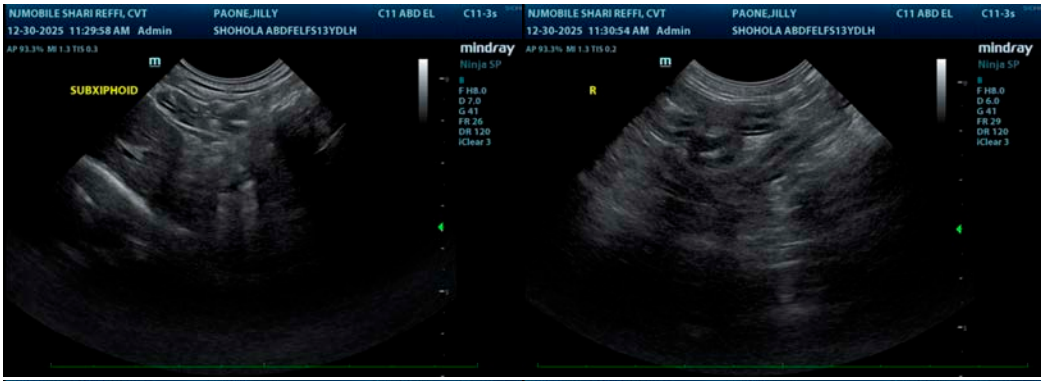

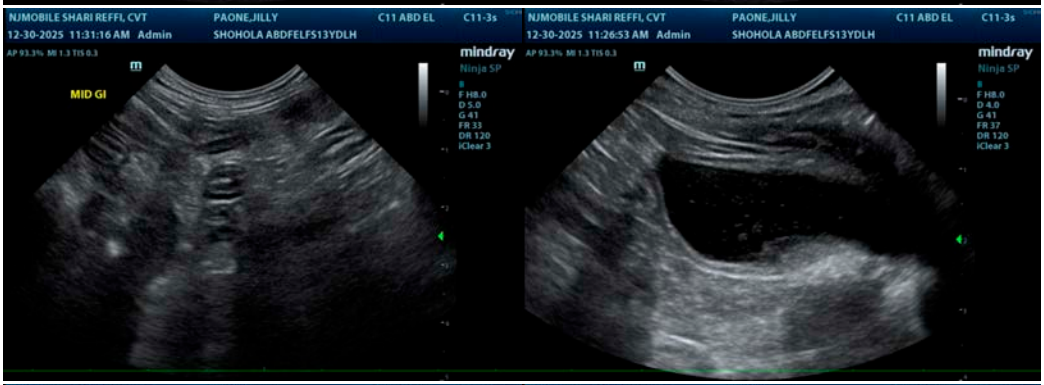

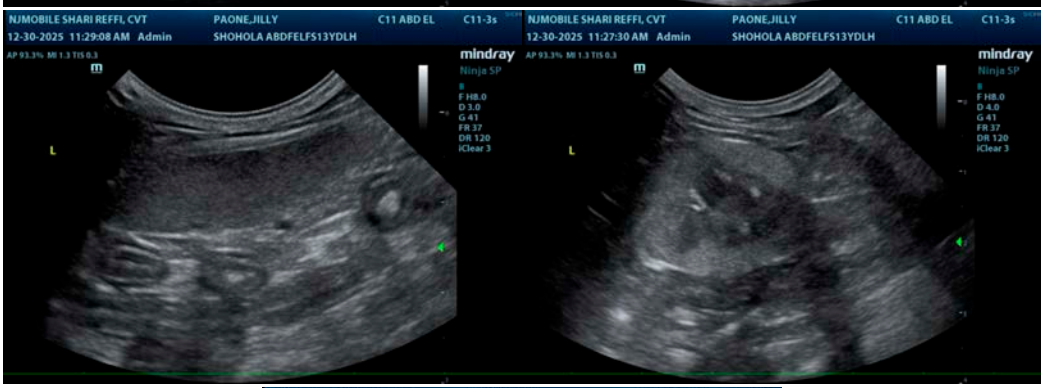

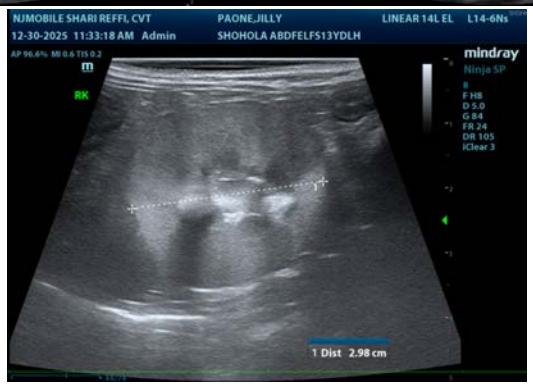

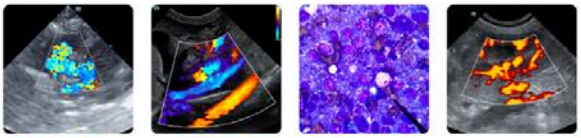

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Brad Harris, DVM, DACVECC, DACVIM (cardiology)

info@SonoPath.com