



PATIENT

Brut Kistner

SPECIES

Feline

BREED

DSH

SEX

Neutered Male

AGE

15 Years

WEIGHT

7 Pounds

PRESENTING CLINICAL SIGNS

Hx of HCM; recently had a seizure. On atenolol and clopidogrel
 Abnormal PE/Chem/CBC/UA Results: CBC/chem wnl; proBNP 1500; UA: protein 1+
 Chest radiographs unremarkable other than hyperinflated lungs and excessive upper GI gas.

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		139	0.36	1.25	0.38	38	73
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	1.14	1.2	1.24	1.0	0.7	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

INTERPRETED BY

Eric Lindquist, DMV
 DABVP, Cert. IVUSS

IMAGING PERFORMED BY

Diane McFadden

HOSPITAL NAME

Marsh Hospital for
 Animals

REFERRING VET

Dr. Milwicki

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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. The **left ventricle** presented myocardial remodeling with minor sectorial hypertrophy, not necessarily reflected in the measurements. It is presumed that the patient had prior excessive thickening and is hence remodeled. The left ventricle measures roughly within normal limits. Appears compensated at this time. **Contractility** appeared to be adequate. The **left ventricular outflow** tract demonstrated normal laminar flow and subjective 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. 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). 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, and pelvic urethra presented normal thicknesses and normal tone. The ureters were not visible which is normal. No uroliths or sediment were visualized and anechoic urine was present. No evidence of inflammatory or neoplastic changes were noted. Ureteral papillae were normal.

The **kidneys** revealed largely normal size and structure, corticomedullary definition and ratio (cortex 1/3 of medulla) were essentially maintained with some age-related loss of curvilinear patterns regarding the capsule and C/M junction. The cortices presented largely uniform texture with some increased



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echogenicity expected for his age patient. Medullary structure differed distinctly from that of the cortex and no evidence of pelvic dilation was present. The left kidney measured 3.85 cm. The right kidney measured 5.25 cm.

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Adrenal Glands

The **adrenal glands** were uniform, yet bilaterally swollen and hypoechoic. This is most consistent with stress-induced hyperplasia. The left adrenal gland measured 0.5 cm. The right adrenal gland measured 0.43 cm.

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Spleen

The **spleen** presented a smooth homogeneous parenchyma hyperechoic to liver and renal cortical parenchyma. The capsule was smooth without noticeable expansion or deviation from within the spleen or adjacent pathology. The splenic vasculature demonstrated normal volume without signs of congestion or thrombosis. No sonographic evidence of acute or chronic inflammatory, neoplastic, or infarctual changes were noted.

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Liver

The **liver** images from right and left intercostal as well as subcostal views revealed subjectively normal liver size, contour, and structure. Some age-related parenchymal remodeling was noted but likely not clinically significant at this time. Vascular and biliary tracts were of normal volume and no evidence of congestion was noted. The gallbladder presented some dependent debris with essentially normal contour. The cystic and common bile ducts were normal. No overt evidence of active inflammatory, infiltrative or regenerative pathology was noted but should be paired with current or past LE elevations regarding any clinical significance to this presentation. The hepatic lymph nodes were unremarkable.

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Gastrointestinal

A large hairball density was noted in the **stomach**, measuring approximately 4.0 cm.

Pancreas

The base and limbs of the **pancreas** were observed to be largely isoechoic to surrounding omental fat. Pancreatic duct and capsular contour were acceptably normal and parenchyma respected normal curvilinear patterns. No overt evidence of active inflammatory or neoplastic disease was noted.

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Diane McFadden

ULTRASONOGRAPHIC FINDINGS

- Myocardial remodeling
- Geriatric abdomen with hairball density in stomach

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

I do not believe that the clinical signs are related to the heart, unless paroxysmal arrhythmia is occurring. No evidence of volume overload. Myocardial remodeling is present, yet this is common for this age patient. No evidence of significant abdominal disease other than presumed hairball accumulation and moderate degenerative renal changes. CT with contrast of the CNS would be recommended given the patient history. Blood pressure measurements warranted if not already performed. Assessment for hypotension would also be warranted.

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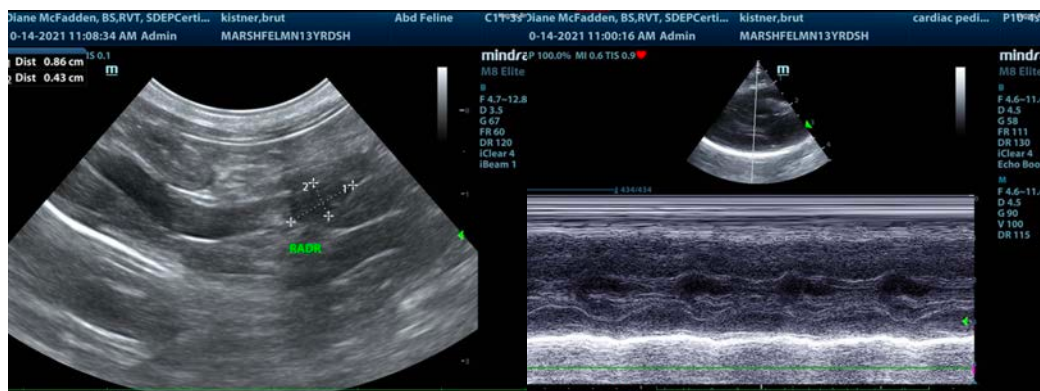
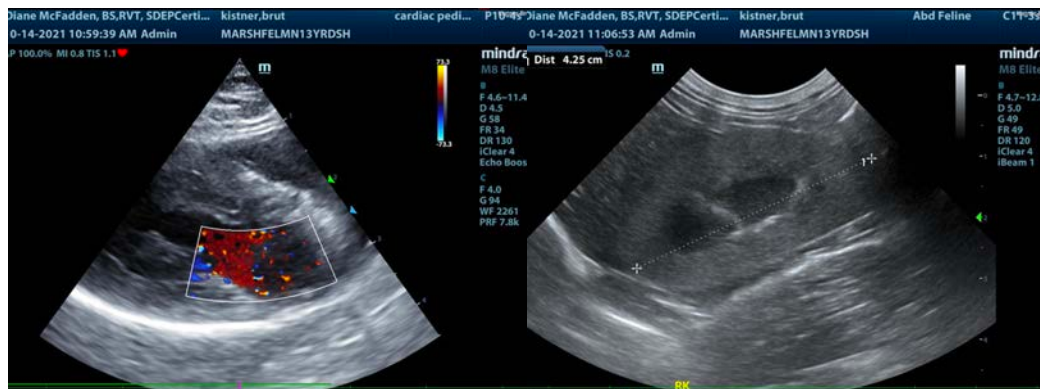
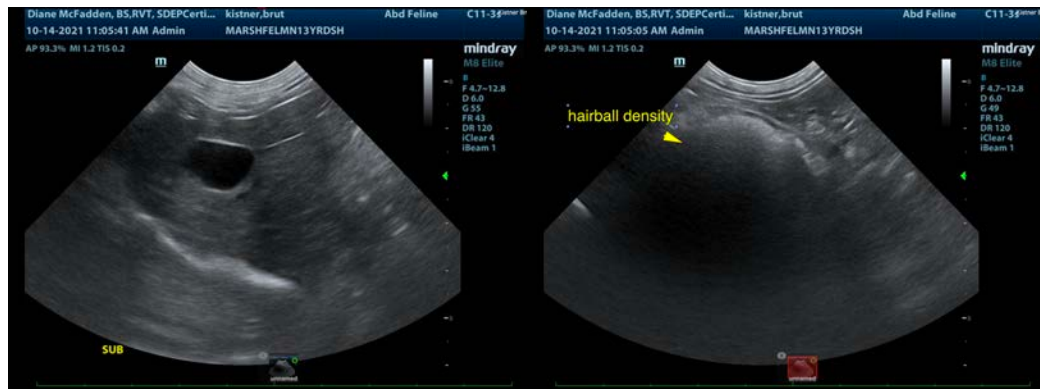
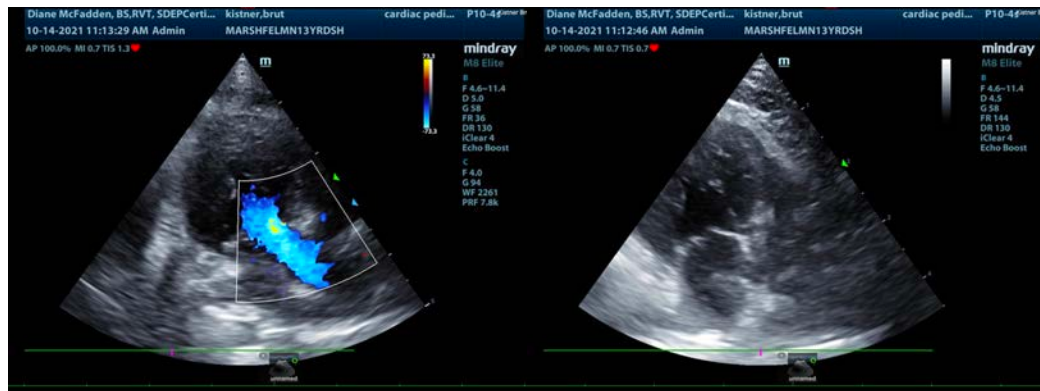
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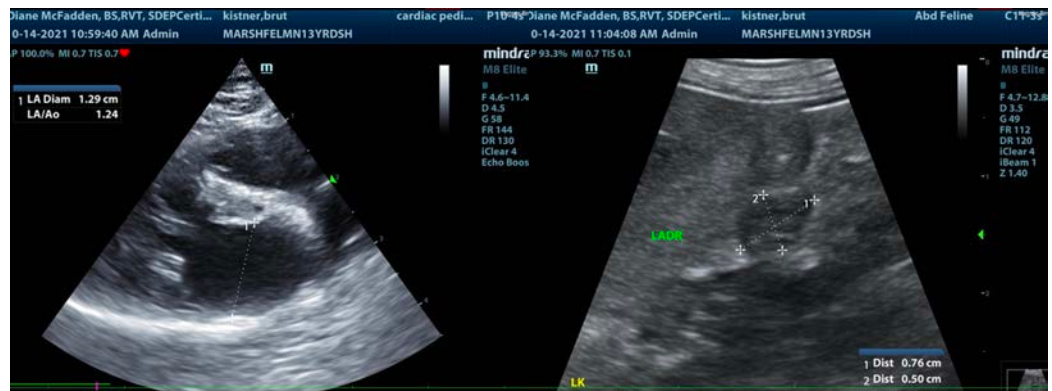
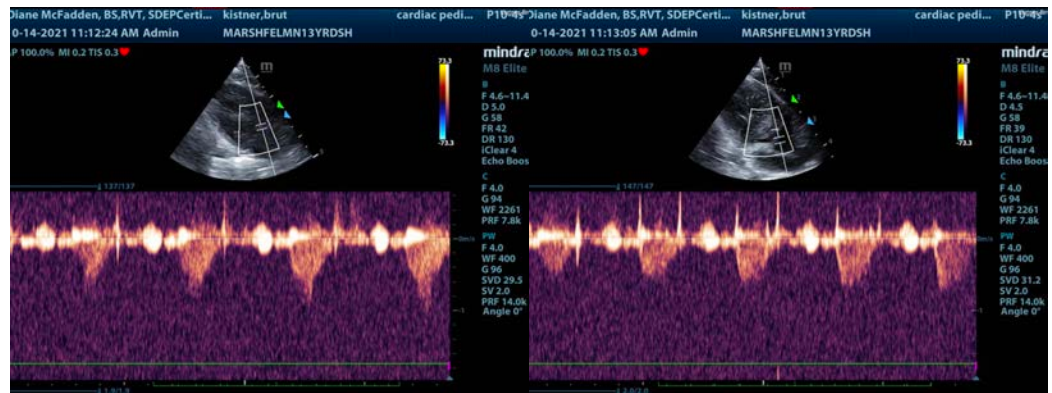
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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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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info@SonoPath.com

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