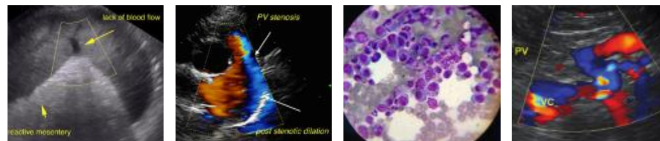
SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™



SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT

Lucy Martinek

SPECIES

Feline

BREED

DSH

SEX

Spayed Female

AGE

16 Years

WEIGHT

9 Pounds

INTERPRETED BY

Eric Lindquist, DMV
DABVP, Cert. IVUSS

IMAGING PERFORMED BY

Kelly Vazquez

HOSPITAL NAME

Ringwood AH

REFERRING VET

Dr. Wilkes

INVOICE

15994

DATE

6/10/22

PRESENTING CLINICAL SIGNS

History: Gallop rhythm and elevated BNP, history of dehydration and lethargy, chronic low hemoglobin on blood work. Current meds: Convenia injection given on 6/6/22.

Abnormal PE/Chem/CBC/UA Results: HGB 9.2, MCV 37, MCH 11, reticulocyte hemoglobin 12.6, total protein 8.9, BNP 322.

ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

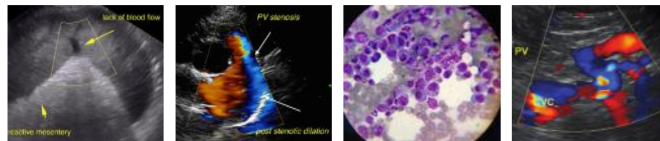
FELINE CARDIAC PARAMETERS	BODY WEIGHT (kg)	HR (BPM)	IVSd (cm)	LVIDd (cm)	LVWd (cm)	FS (%)	EF (%)
NORMAL PARAMETER	------	150-240	0.3-0.6	1.0-2.1	0.25-0.6	35-67	80-100
PATIENT	--	NM	0.41	0.98	0.67	45	--
FELINE CARDIAC PARAMETERS	**LA/AO** (Boon)	**LA/AO HEART BASE** (Sisson)	**LA** 2D 4-chamber long axis 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	1.1	1.1	1.45		1.00	.77	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 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 normal thicknesses with linear contour and was not dilated nor restricted. Myocardial remodeling noted in this patient, yet not a clinical issue. **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 ventricle presented slight thickening of the left ventricular free wall. 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. The pleural and thoracic space were normal.

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



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was present. No evidence of inflammatory or neoplastic changes were noted. Ureteral papillae were normal.

The **kidneys** presented moderate degenerative changes. The right kidney revealed irregular contour, infarcts and calculi. The right kidney measured 3.4 cm. The left kidney revealed a corticomedullary calculus at the caudal pole, measuring 0.36 cm.

Adrenal Glands

Both **adrenal glands** were visualized and recognized as having 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 right adrenal gland measured 0.31 cm. The left adrenal gland measured 0.34 cm.

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. The spleen measured 0.91 cm.

Liver

The **liver** images submitted revealed subjectively normal liver size, contour, and structure. Parenchymal echogenicity was naturally coarse and hypoechoic to the spleen. Vascular and biliary tracts were of normal volume with no evidence of congestion. The gallbladder presented acceptably thin walls with primarily anechoic content. The cystic and common bile ducts were normal. No pathological hepatic lymphadenopathy was evident. No overt structural evidence of inflammatory, infiltrative or regenerative pathology was evident.

Gastrointestinal

Examination of the **gastrointestinal tract** revealed a stomach and intestine free of stasis, of normal wall thickness, acceptable curvilinear mural detail, and peristaltic activity. Small and large intestine demonstrated normal luminal chyme and stool consistency respectively. No obstructive or overt infiltrative disease was noted. No associated abnormal lymphatic activity was noted.

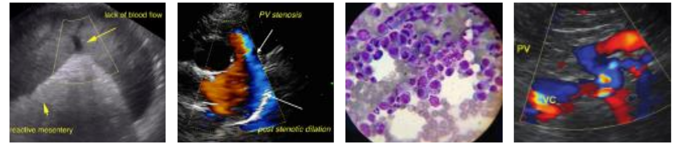
Pancreas

Mild age-related **pancreatic** changes. The right base of the pancreas revealed more heterogeneous changes in a region of approximately 1.0 cm x 1.0 cm with enhanced surrounding mesentery. Some low-grade inflammation may be playing a role in the clinical status of the patient.

ULTRASONOGRAPHIC FINDINGS

- Myocardial remodeling
- Normal cardiac function and volumes- no evidence of clinical cardiac disease
- Moderate degenerative renal changes and calculi
- Suspect low-grade pancreatitis, may be playing a role in the clinical status of the patient.
- Geriatric abdomen

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS



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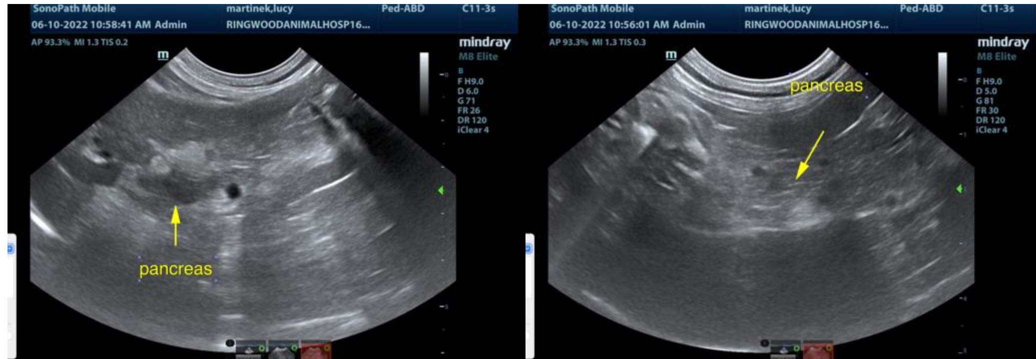
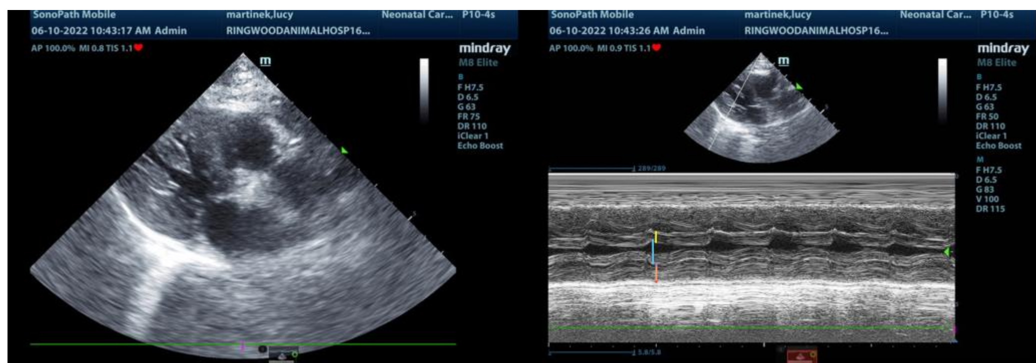
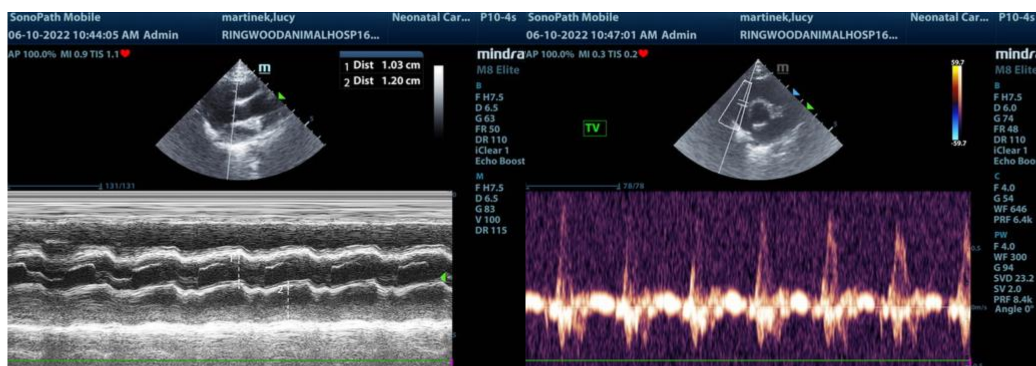
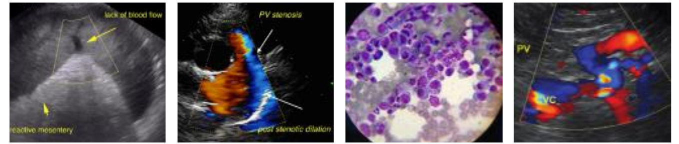
Blood pressure measurements warranted, if not already performed in this patient. No cardiac medications recommended. Largely geriatric abdomen and heart. Supportive care should prove effective. Judicious use of fluid therapy should not create a problem with the heart, however, I would not utilize more than 1.5 in maintenance, if necessary, clinically.









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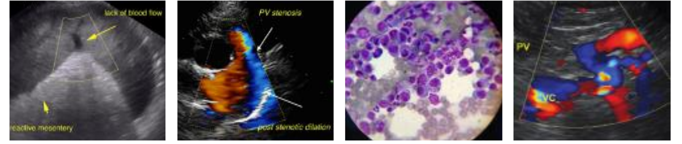
The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I



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can be of any further assistance please contact me.

Eric Lindquist, DMV, DABVP, Cert. IVUSS, CEO of SonoPath.com
info@SonoPath.com