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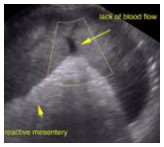

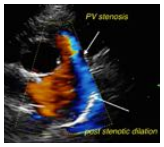

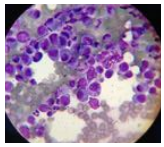
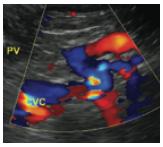

SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT

Harley Jacobs

SPECIES

Feline

BREED

Domestic Shorthair

SEX

Spayed female

AGE

12 years

WEIGHT

13 lbs

INTERPRETED BY

Eric Lindquist, DMV DABVP, Cert. IVUSS

IMAGING PERFORMED BY

Dr. Kitz

HOSPITAL NAME

Woodlands AH

REFERRING VET

Dr. Kitz

INVOICE

43467

DATE

3/22/23

PRESENTING CLINICAL SIGNS

History: Patient presented a week ago for lethargy, decreased appetite. Noted muffled heart and lung sounds on the left. No obvious murmur. Pet had shallow and rapid breathing with some abdominal component noted.
Abnormal PE/Chem/CBC/UA Results: Labwork results were all normal, including BNP snap test. Radiographs showed pleural effusion in the left side of the thorax. Thoracocentesis was performed using ultrasound guidance, and 150 mL of serosanguinous fluid was removed. The fluid was submitted for cytology (both sediment and free fluid were reviewed -- really wanted to be sure no obvious lymphoma) which showed mild neutrophilic inflammation but no neoplasia or infection. The pathologist felt that lympoma cells would have exfoliated into the fluid. Radiographs pre and post-thoracocentesis were submitted for review and the heart was thought to be slightly enlarged with no evidence of pulmonary effusion. The radiologist could not determine whether there was a possible lung nodule on the left vs. lung that was still somewhat collapsed and could not rule out pleural effusion secondary to left-sided heart failure. Patient did great post-thoracocentesis, was started on low dose furosemide pending echo today and has been quieter than normal but is eating and breathing fine. When scanning on the left it was hard to miss the pocket of pleural effusion that has started to reaccumulate in the same region I removed fluid last week. The fluid is really very isolated to one area in the left side of the lung field.

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

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. The **myocardium** presented normal echogenicity without subjective evidence of significant fibrotic or ischemic disease. **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 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). A large amount of thoracic fat was noted in this patient as well as moderate pleural effusion. Glide sign was noted in the lungs with an overt lung mass that was surrounded by echogenic free fluid. The lung mass measured approximately 3.0 cm with areas of mineralization. This is strongly consistent with carcinoma. Other pleural irregularities were noted in the chest.

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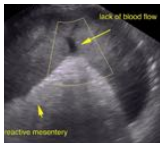
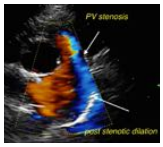
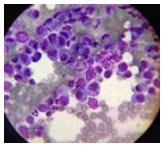
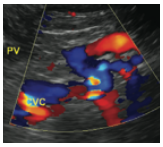

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FELINE CARDIAC PARAMETERS	BODY WEIGHT (kg)	HR (BPM)	IVSd (cm)	LVIDd (cm)	LVWd (cm)	FS (%)	EF (%)
NORMAL PARAMETER	------	150-240	0.3-0.6	1.0-2.1	0.25-0.6	35-67	80-100
PATIENT		NM	0.55	1.01	0.61	51	86

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	1.35		1.16		0.82	NM

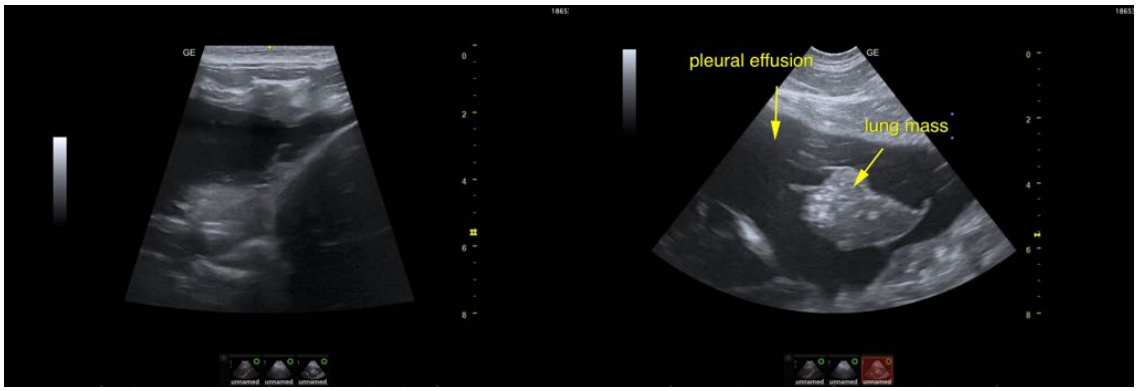
Adapted from June Boon,Veterinary Echocardiography,1998
Sisson D et al. JVIM 1991; 5: 232, Jacobs et al. Am J Vet Res 1985; 46:1705

ULTRASONOGRAPHIC FINDINGS

Extra thoracic, non-cardiogenic pleural effusion with lung mass.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

This is strongly consistent with thoracic carcinomatosis or other neoplasia. Lung lobe torsion is a minor potential. Potential CT for surgical planning would be appropriate. However, given the amount of pleural effusion surgery is not likely an option other than a palliative measure.



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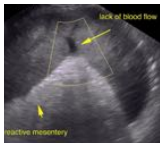
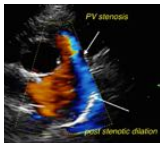
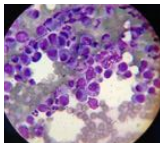
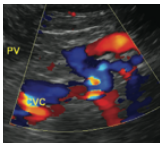

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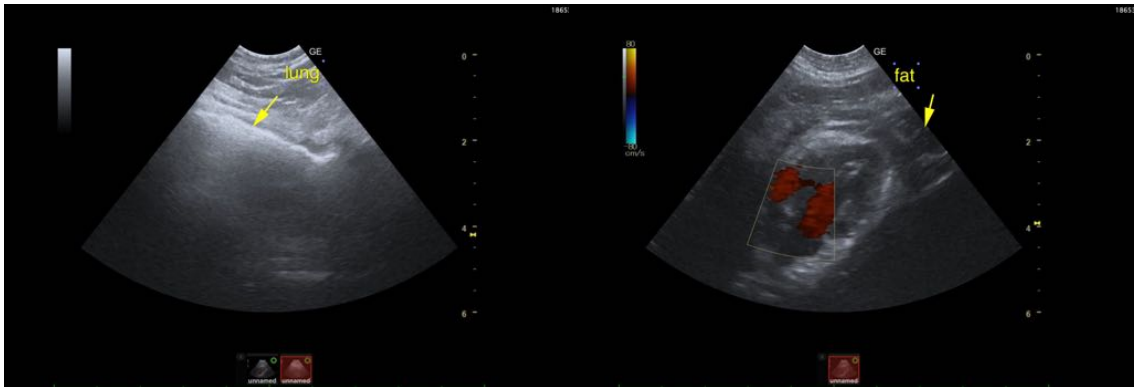

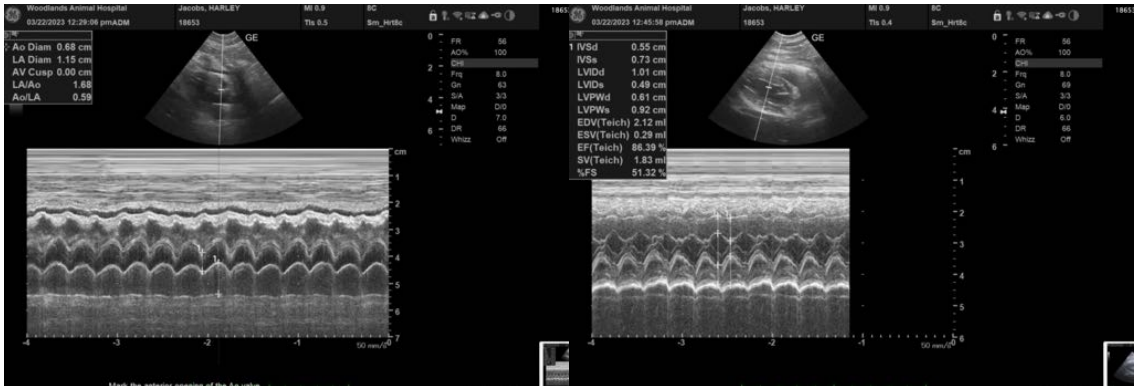

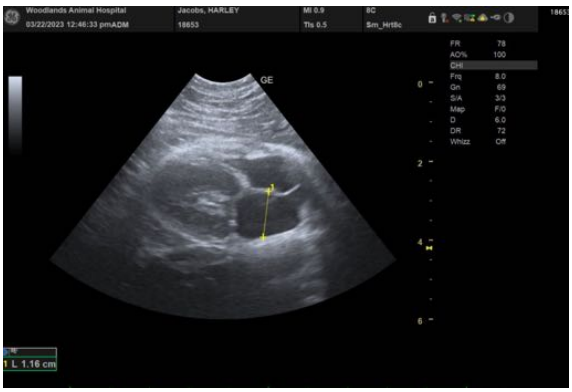

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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