



## PATIENT

Louise Bakken Paws  
Rescue

## SPECIES

Feline

## BREED

DSH

## SEX

Female

## AGE

5 Months

## WEIGHT

2.83 kg

## INTERPRETED BY

Eric Lindquist, DMV  
DABVP, Cert. IVUSS

## IMAGING PERFORMED BY

Dr. Jessie Evoniuk

## HOSPITAL NAME

State Avenue VC

## REFERRING VET

Dr. Jessie Evoniuk

## INVOICE

17976

## DATE

10/31/22

## PRESENTING CLINICAL SIGNS

History: Had been seen by SAVC thru the rescue for kittenhood vax and corneal ulceration treatment. Was taken to neighboring clinic and a heart murmur documented and alerted she was a high anesthetic risk so discontinued OHE. Still in rescue with no clinical signs US for assessment of cardiac function and anesthetic risk. Indicate if cardio referral is recommended for further congenital cardiac disease work-up

Abnormal PE/Chem/CBC/UA Results: Very wiggly/active, purring kitten. Gave Butorphanol with minimal effect and redosed Gabapentin for US imaging as tolerated. Still very difficult to get EKG and murmur audio.

## ULTRASONOGRAPHIC EXAMINATION OF THE HEART

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	0.33	1.67	0.39	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	1.3		1.25		2.5	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 **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 **right atrium** and auricle revealed normal size, structure and content. **Tricuspid** valvular assessment demonstrated adequate linear morphology and kinetics. The pulmonic outflow velocity was mildly excessive. A comet tail lung pattern was noted in the peripheral alveoli, indicative of alveolar disease. The ventricular outflow tract revealed an irregular tissue thickening at the ventricular septum, just prior to the aortic valve- this may represent a ventricular septal defect. The right ventricle was mildly thickened with minor volume overload of the pulmonary artery. Further doppler evaluation of the ventricular septum in 5 chamber long axis, as well as short axis heart base views are indicated. If color flow demonstrates a ventricular septal defect, CW duplex doppler is recommended to assess aortic outflow doppler and outflow velocity, as well as deep pulmonary artery velocities are also indicated.



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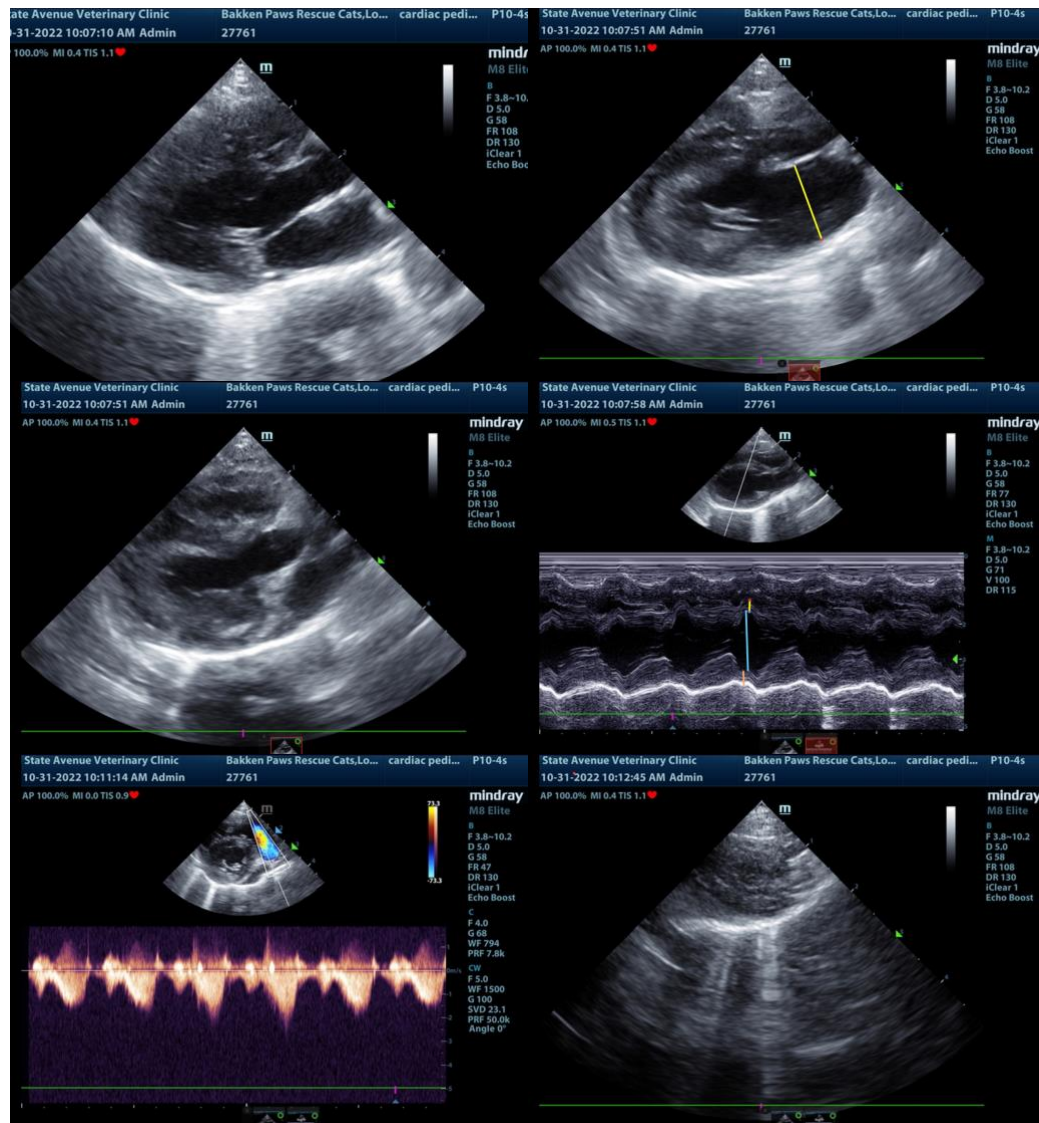
Dr. Jessie Evoniuk

**ULTRASONOGRAPHIC FINDINGS**

- Thickened irregular ventricular septum
- No volume overload noted in this patient

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

Primary alveolar disease is suspected given the comet tail lung pattern. Anesthetic risk is minor from a cardiac standpoint at this point, however, primary respiratory disease may be playing a role in the clinical history.



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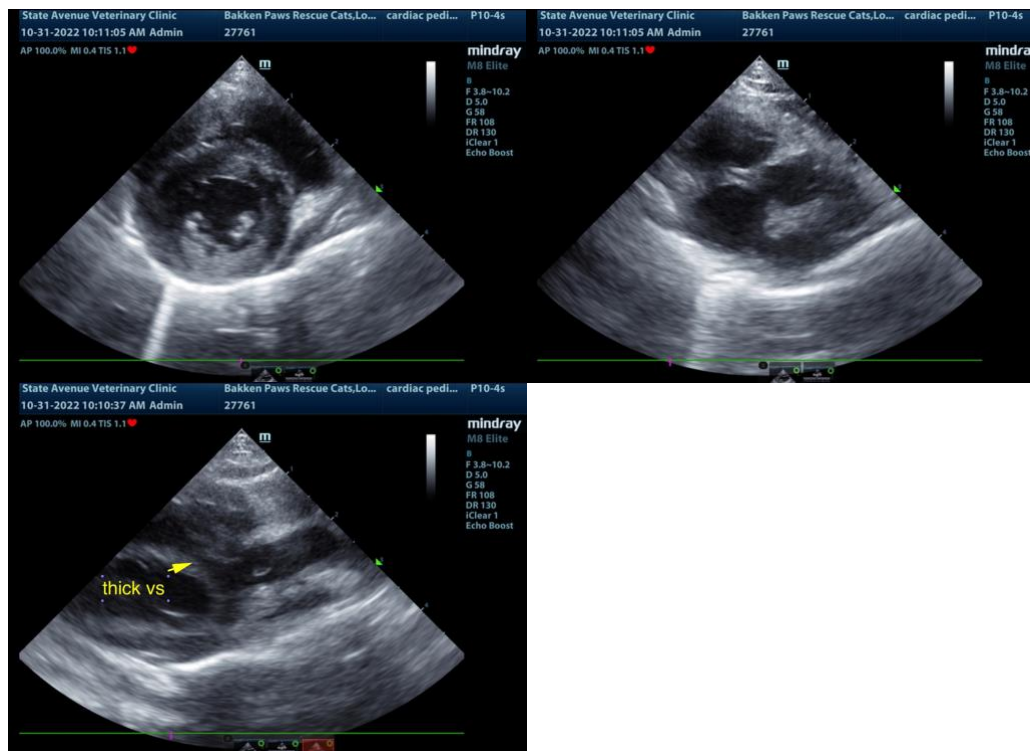
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The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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