

## PATIENT PRESENTING CLINICAL SIGNS

Benny Juntunen

### SPECIES

Feline

### BREED

Siamese Mix

### SEX

MN

### AGE

10 Years

### WEIGHT

13.4 lbs

### INTERPRETED BY

R. McKenzie Daniel,  
DVM, DABVP  
(Canine and Feline)

### IMAGING PERFORMED BY

Jenna Walsh, CVT

Presented for respiratory distress 3/6/22. Marked pleural effusion tapped - removed 350 ml. Follow up about 6 hr later removed additional 60 ml. Progressive eupneic with furosemide in hospital. Heart Rate and Respiratory Rates 188 bpm, 36 but increased Blood Pressure Measurements 120/94 MAP 104 mmHg Current Medications In ICU - Furosemide 1 mg/kg q 4 hr (approximately - titrated to patient need), clonidine 18.7 mg PO q 24 hr, pimobendan 1.25 mg PO q 12 hr, oxygen taper (moving towards room air),  
Abnormal PE/Chem/CBC/UA Results: BNP-ABnormal CBC-NSF, stress leukogram Lymph 0.83 CHEM10-stress hyperglycemia BG 169, ALT < 10, Creat 2.1 USG: 1.040 Pleural Fluid-TP 3.5mg/dL, cytology: mature lymphocytes, rare neutrophil, rare plasma cells and possible mesothelial cells, no obvious neoplastic cells noted Recheck FAST about 11am notes minimal pleural effusion, B lines still present bilaterally. Radiographs during follow up on 3/7/22 at 11am. Attached. Radiographs demonstrates pulmonary edema and some remaining pleural effusion. Radiographs attached. Recheck Chem this afternoon.

## 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		201	0.48	1.43	0.39	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		1.1	1.2	1.0	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							

### HOSPITAL NAME

Willamette Veterinary  
Hospital

### REFERRING VET

Dr. Schneck

### INVOICE

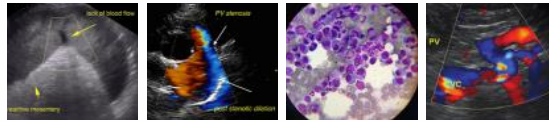
50766

### DATE

3-7-22

### Cardiac Presentation

The echocardiogram in this patient demonstrated normal **left atrial** size and structure. Chamber volume and blood echogenicity were normal. The cranial and caudal **mitral** valve leaflets presented minor irregular age-related changes that are not clinically significant at this time with adequate extension in systole and union in diastole. The **left ventricle** presented overtly normal free wall and septal thicknesses with areas of mild asymmetry. The **myocardium** presented overtly normal echogenicity with some evidence of minor myocardial remodeling expected for age. **Contractility** of the ventricular walls was adequate as evidenced by the fractional shortening measurement above. The **left ventricular outflow** tract demonstrated normal laminar flow with subjectively unremarkable structure. Subjective assessment of the **right atrium** and auricle revealed normal size, structure and content. No evidence of masses was noted. **Tricuspid** valvular assessment demonstrated expected findings for this age patient. Minor TR measuring 1.6 m/s. The **right ventricle** exhibited subtle prominent size not overtly consistent with right CHF with normal echogenicity and overall thickness. **Pulmonic** tract assessment revealed normal valve structure, laminar systolic flow, and diameter (approx. 1:1 pa/ao ratio). No dilation due to



**PATIENT**

Benny Juntunen

cor pulmonale, stenosis, or pulmonic hypertension was noted. No visible **pericardial** free fluid. Mild volume pleural fluid exhibiting subjective cellular component. Potential for pleural fibrin possible. No overt evidence of cardiac, pericardial, or cranial mediastinal masses in the visible window.

**SPECIES**

Feline

Transdiaphragmatic view as well as peripheral lung view revealed comet tail lung pattern, which is echogenic sound wave interface with microconsolidations within the caudal lung field. The lung field should not be visualized by sonogram unless pathology is present. Although nonspecific, this finding is suggestive of alveolar lung disease such as neoplasia, thromboembolic disease, chronic inflammatory disease, infection with microconsolidation, or other.

**BREED**

Siamese Mix

**ULTRASONOGRAPHIC FINDINGS**

**SEX**

- Overtly normal cardiac structure and function, mild LV myocardial remodeling.
- Normal left atrium.
- Mild TR - not overtly consistent with clinical pulmonary hypertension.
- Mild volume pleural free fluid exhibiting cellular component.
- Transdiaphragmatic and peripheral lung comet tail artifact.

**MN**

**AGE**

10 Years

**INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS**

**WEIGHT**

13.4 lbs

Subjectively, given the lack of significant left or right heart chamber enlargement, systolic dysfunction, or overt clinical pulmonary hypertension, the pleural effusion in this case was not overtly consistent with cardiogenic pleural effusion. Given positive response to diuretic therapy, however, this potential cannot be definitively excluded. Likewise, potential exceptions to this presentation may include iatrogenic or stress induced cardiogenic effusion if clinically applicable. Correlation with clinical history is recommended.

**INTERPRETED BY**

R. McKenzie Daniel,  
DVM, DABVP  
(Canine and Feline)

Given positive response to diuretic therapy, continued Furosemide at lowest effective dose to control clinical signs with monitoring of renal parameters and blood pressure would be reasonable.

**IMAGING PERFORMED BY**

Jenna Walsh, CVT

If not done, submission of pleural effusion for pathology assessment +/- culture and sensitivity if clinically indicated could be considered.

Recheck echocardiogram suggested in 4-6 weeks, sooner if persistent to aggressive pleural effusion is noted.

**HOSPITAL NAME**

Willamette Veterinary  
Hospital

**REFERRING VET**

Dr. Schneck

**INVOICE**

50766

**DATE**

3-7-22



**PATIENT**

Benny Juntunen

**SPECIES**

Feline

**BREED**

Siamese Mix

**SEX**

MN

**AGE**

10 Years

**WEIGHT**

13.4 lbs

**INTERPRETED BY**

R. McKenzie Daniel,  
DVM, DABVP  
(Canine and Feline)

**IMAGING PERFORMED BY**

Jenna Walsh, CVT

**HOSPITAL NAME**

Willamette Veterinary  
Hospital

**REFERRING VET**

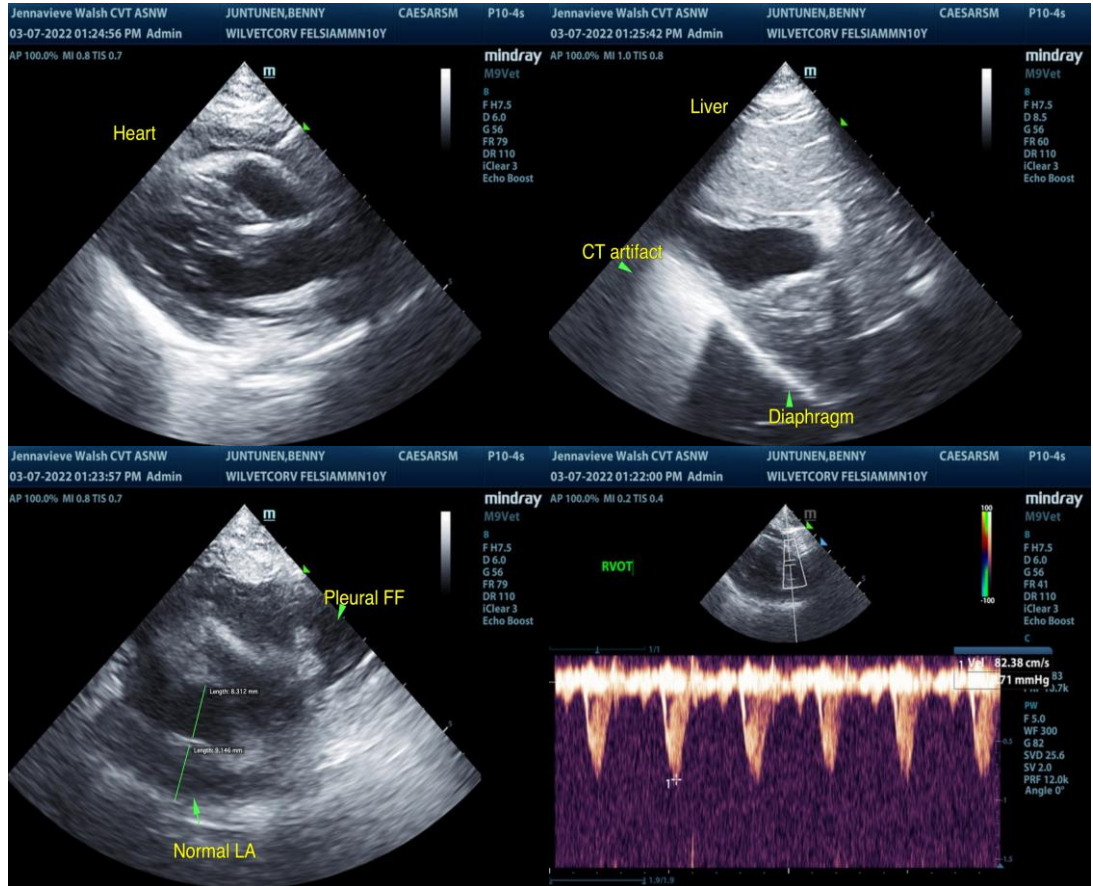
Dr. Schneck

**INVOICE**

50766

**DATE**

3-7-22





**PATIENT**

Benny Juntunen

**SPECIES**

Feline

**BREED**

Siamese Mix

**SEX**

MN

**AGE**

10 Years

**WEIGHT**

13.4 lbs

**INTERPRETED BY**

R. McKenzie Daniel,  
DVM, DABVP  
(Canine and Feline)

**IMAGING PERFORMED BY**

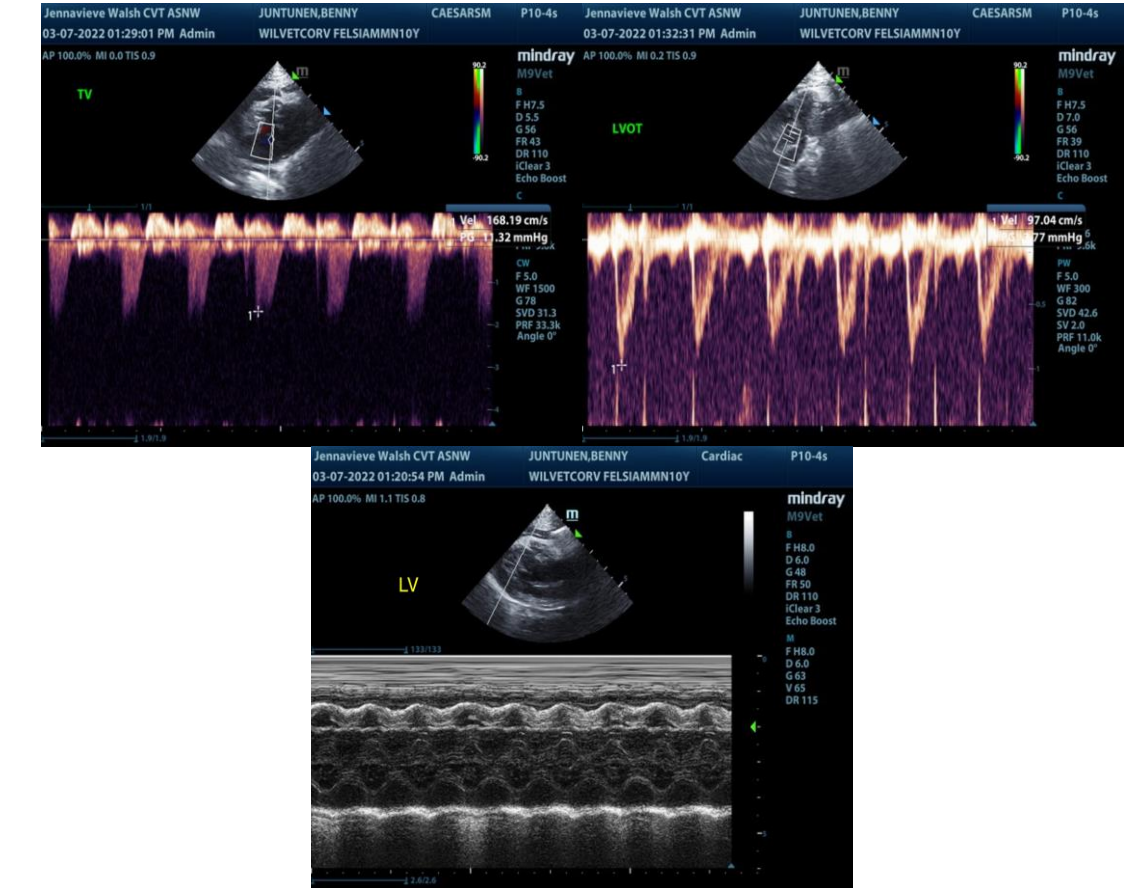
Jenna Walsh, CVT

**HOSPITAL NAME**

Willamette Veterinary  
Hospital

**REFERRING VET**

Dr. Schneck



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.

R. McKenzie Daniel, DVM, DABVP (Canine / Feline Practice)  
info@SonoPath.com

**INVOICE**

50766

**DATE**

3-7-22