



**PATIENT PRESENTING CLINICAL SIGNS**

Bentley Summers

3 episodes of vomiting in last 24 hours. Owner only saw one today. Patient threw up some tinsel. A larger piece of tinsel is still missing per owner. Also found 3 other piles of vomit about 1 week ago. There are 3 cats in the home so harder to tell who did what. Patient stopped eating dry food about 2 months ago when owner made a big move to a new home. Will eat wet food. Eating about 80% of normal volume of food. Last meal was 11pm yesterday. No known toxin. Heart murmur grade 3/6, strong pulses, very tense. Unable to obtain BP etc while this patient is awake and exam is minimal. HR 230.

**SPECIES**

Feline

**BREED**

DSH

Abnormal PE/Chem/CBC/UA Results: N/A - pending, will collect once we can handle him.

**ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN AND HEART**

**SEX**

MN

**AGE**

6yr

**WEIGHT**

5.45kg

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		112	0.52	1.3	0.52	36	71
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	1.3	1.3	1.0	0.7		

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**

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

**IMAGING PERFORMED BY**

Crystal Hill

**HOSPITAL NAME**

Hamilton Region  
Emergency Clinic

**REFERRING VET**

Grewal

**INVOICE**

14178ag

**DATE**

06/22/2023

**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. No overt MR present on Doppler. 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. The contractility of the ventricular walls was adequate yet mildly subnormal as evidenced by the fractional shortening measurement and subjective evaluation of the different regions and angles of the myocardium given sedation. The left ventricular outflow tract demonstrated normal laminar flow and subjective structural integrity. Normal measured LVOT velocity was present. 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. No overt TR present on Doppler. 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). Normal measured RVOT velocity was present. 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. Mild bradycardia given sedation.

**Urinary System**



<b>PATIENT</b>	The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2 cm exhibited normal thickness and tone. Anechoic urine was present in the lumen with no uroliths or sediment. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes were noted.
Bentley Summers	
<b>SPECIES</b>	Normal renal size with asymmetrical margination was present in both kidneys. The renal cortex presented uniformly increased in echogenicity with uniform echotexture. The renal cortex appeared to be hypertrophied resulting in an altered cortex: medulla ratio. Mild loss of corticomedullary distinction was also present. The renal medullary volume was subjectively reduced. The left kidney measured 3.7 cm in length. The right kidney measured 4.0 cm in length.
Feline	
<b>BREED</b>	The area of the aortic trifurcation was free of pathology.
DSH	
<b>SEX</b>	<b>Adrenal Glands</b>
MN	The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.37 cm width. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 0.36 cm width.
<b>AGE</b>	<b>Spleen</b>
6yr	The spleen exhibited a finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. The capsule was smooth and regular without apparent expansion. The splenic vasculature at the hilus was normal in volume with no evidence of congestion or thrombosis. Acute to chronic inflammatory, neoplastic, or benign parenchyma changes were not noted.
<b>WEIGHT</b>	<b>Liver/Gallbladder</b>
5.45kg	The liver was subjectively normal in size, structure, and contour. The liver parenchyma was uniform and hypoechoic to the spleen with a mild coarse echotexture. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was non-distended in size with thin walls and primarily anechoic luminal content. The cystic and common bile ducts were normal.
<b>INTERPRETED BY</b>	<b>Gastrointestinal</b>
R. McKenzie Daniel, DVM, DABVP (Canine and Feline)	The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach was empty with mild retained anechoic pyloric fluid and lumen gas artefact. No signs of ileus, obstruction or foreign material. The pylorus wall measured 0.23 cm in width.
<b>IMAGING PERFORMED BY</b>	<b>HOSPITAL NAME</b>
Crystal Hill	The small intestine presented intact wall layering with segmental mildly prominent muscularis layer and mildly prominent jejunum wall measurement. No overt pathology at the level of the ileocolic junction. The lumen of the small intestine was empty with no signs of ileus, obstruction or foreign material. The duodenum wall measured 0.25 cm width. The jejunum wall measured up to 0.26 cm width. The ileocolic wall measured 0.28 cm width.
<b>REFERRING VET</b>	<b>Pancreas</b>
Grewal	The parenchyma of the left limb, body and right limb of the pancreas presented isoechoic to the adjacent omental fat. A normal curvilinear capsule contour of the pancreas was present. The visible pancreatic duct was normal. No signs of active inflammation or neoplastic disease was evident.
<b>INVOICE</b>	<b>Free Abdomen</b>
14178ag	No omental masses, overt lymphadenopathy or peritoneal effusion was present.
<b>DATE</b>	
06/22/2023	



## PATIENT

Bentley Summers

## SPECIES

Feline

## BREED

DSH

## SEX

MN

## AGE

6yr

## WEIGHT

5.45kg

## INTERPRETED BY

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

## IMAGING PERFORMED BY

Crystal Hill

## HOSPITAL NAME

Hamilton Region  
Emergency Clinic

## REFERRING VET

Grewal

## INVOICE

14178ag

## DATE

06/22/2023

## ULTRASONOGRAPHIC FINDINGS

- Normal echocardiogram given sedation.
- Minor retained pyloric fluid and focal gas artefact.
- Possible mild inflammatory enteropathy.
- Mild interstitial nephrosis renal pattern.

## INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

A definitive cause of the patient's murmur was not evident without evidence of structural or functional cardiomyopathy. No evidence of clinical issues such as left or right heart chamber enlargement, LV systolic dysfunction, clinical pulmonary hypertension or overt valvular insufficiencies was present. If no volume changes such as dehydration or anemia are present, a benign physiologic flow murmur is probable although a small non-visualized flow abnormality is possible.

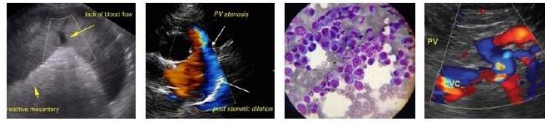
Regardless, the lack of left or right heart chamber enlargement indicate that the hemodynamic effects of the murmur are minimal. No indication for cardiac medications. Continued conservative monitoring of the murmur is recommended.

Recheck echocardiogram recommended in 6-12 months, sooner if murmur intensity increases or clinical signs suggestive of heart disease arise.

The bilateral kidneys may be a normal patient variant although potential for emerging chronic nephropathy cannot be excluded. Correlation with assessment of renal parameters and UA is suggested.

No overt evidence of GI obstructive pattern or visualized foreign body. The small intestine exhibited subtle mural changes which may suggest mild inflammatory criteria. A GI panel to include PLI/TLI/Cobalamin/Folate may be considered if persistent/progressive GI signs or weight loss. No overt indication for immediate surgical intervention.

Empirically, a canned limited antigen or hydrolyzed diet trial with potential long term dietary therapy and as needed GI support may prove beneficial.



**PATIENT**

Bentley Summers

**SPECIES**

Feline

**BREED**

DSH

**SEX**

MN

**AGE**

6yr

**WEIGHT**

5.45kg

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Crystal Hill

**HOSPITAL NAME**

Hamilton Region  
Emergency Clinic

**REFERRING VET**

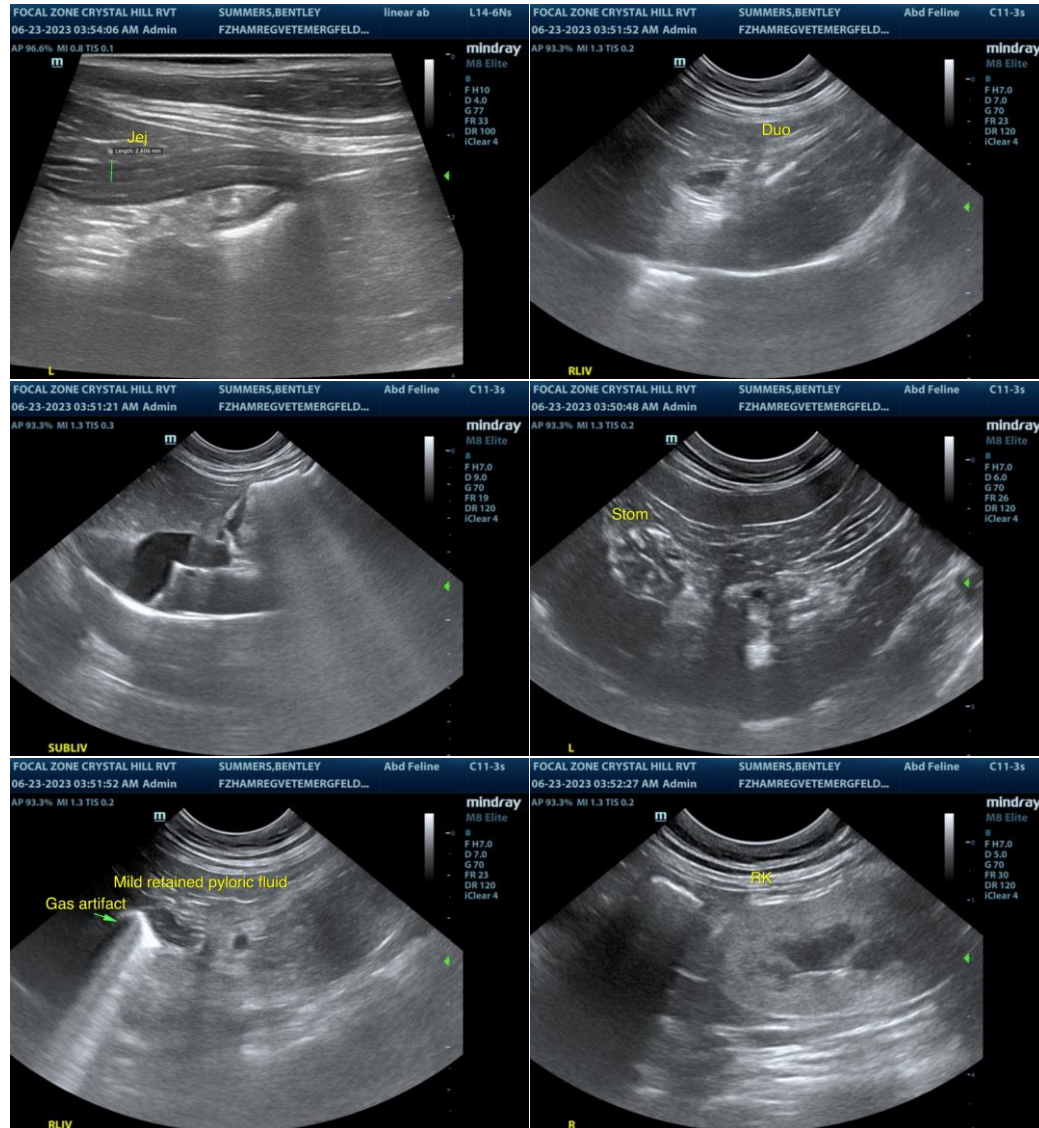
Grewal

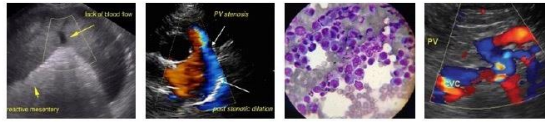
**INVOICE**

14178ag

**DATE**

06/22/2023





**PATIENT**

Bentley Summers

**SPECIES**

Feline

**BREED**

DSH

**SEX**

MN

**AGE**

6yr

**WEIGHT**

5.45kg

**INTERPRETED BY**

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

**IMAGING PERFORMED BY**

Crystal Hill

**HOSPITAL NAME**

Hamilton Region  
Emergency Clinic

**REFERRING VET**

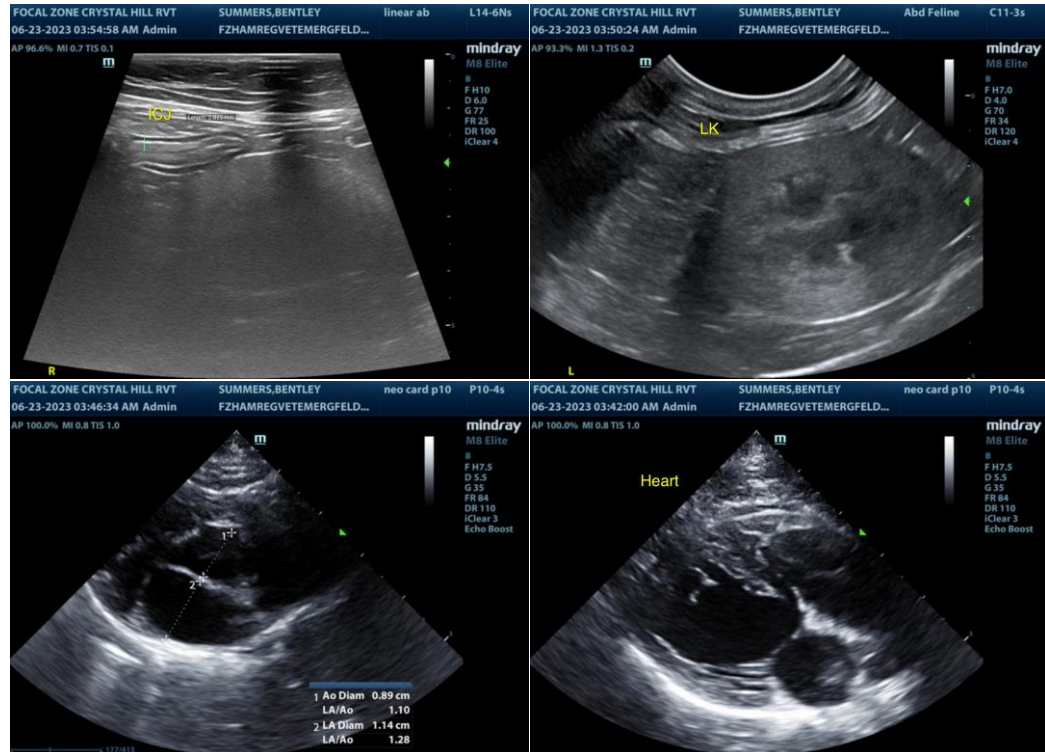
Grewal

**INVOICE**

14178ag

**DATE**

06/22/2023



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