



PATIENT PRESENTING CLINICAL SIGNS

Sprite Bishop Grade 3-4 heart murmur. Bilateral lumps on neck. No obvious organomegaly or pain on palpation. Previous UTI treated and cleared with Clavamox. History of renal disease.

SPECIES Abnormal PE/Chem/CBC/UA Results: Elevated renal values, borderline decrease in K, elevated T4 pending thyroid panel. HR 210, RR30
Feline

BREED ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

DSH

SEX

FS

AGE

16 years

WEIGHT

3.5 kg

INTERPRETED BY

R. McKenzie Daniel, DVM, DABVP

IMAGING PERFORMED BY

Crystal Hill

HOSPITAL NAME

Governors Road Animal Hospital

REFERRING VET

Dr. Farooq

INVOICE

16404

DATE

3/21/23

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		270	0.59	1.21	0.56	59	91
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	1.2		2.1	NM	

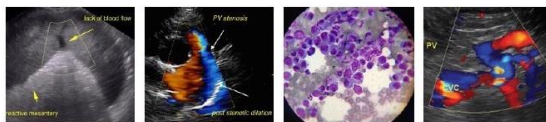
Adapted from June Boon, Veterinary Echocardiography, 1998
Sisson D et al. JVIM 1991; 5: 232, Jacobs et al. Am J Vet Res 1985; 46:1705

Cardiac Presentation

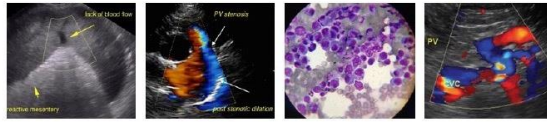
The echocardiogram in this patient demonstrated normal **left atrial** size and structure. Chamber volume and blood echogenicity were normal. No evidence of left or right atrium spontaneous contrast. The cranial and caudal **mitral** valve leaflets presented minor irregular age-related changes that are not clinically significant at this time with adequate extension in systole and union in diastole. No overt MR was present on Doppler, although difficult to ascertain owing to tachycardia. The **left ventricle** presented borderline prominent free wall and septal thicknesses yet within normal limits for LV wall thickness with mild ailinear contour. The **myocardium** presented some minor echogenic remodeling consistent with expected age-related change. **Contractility** of the ventricular walls was adequate and in normal range for this breed and patient size. The **left ventricular outflow** tract demonstrated overtly normal laminar flow and 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. No overt TR was present on Doppler. The **right ventricle** was of normal size (1/3 diameter of



PATIENT	LV), echogenicity and thickness. Pulmonic tract assessment revealed normal valve structure, laminar flow, and diameter (approx.1:1 pa/ao ratio). Mild increased measured RVOT velocity was noted. No evidence of cuor pulmonale or pulmonary hypertension was noted. No visible pericardial or free pleural fluid was noted. The mediastinum was free of masses in the visible window. Consistent tachycardia was present.
Sprite Bishop	
SPECIES	
Feline	Urinary System
BREED	The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2.0 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 was noted.
DSH	
SEX	The area of the aortic trifurcation was free of pathology.
FS	Normal renal size with asymmetrical margination were 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. Mild bilateral pyelectasia was present. The left kidney measured 3.5 cm in length. The right kidney measured 3.0 cm in length.
AGE	
16 years	
WEIGHT	Adrenal Glands
3.5 kg	The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.33 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.
INTERPRETED BY	Spleen
R. McKenzie Daniel, DVM, DABVP	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.
IMAGING PERFORMED BY	
Crystal Hill	
HOSPITAL NAME	Liver/ Gallbladder
Governors Road Animal Hospital	The liver was subjectively normal in size, structure, and contour. Normal parenchyma echogenicity exhibiting mild to moderate coarse echotexture and subjective mild parenchymal remodeling. Probable subtle areas of biliary tree mineralization were noted and considered incidental, given the lack of hepatic enzyme elevations, yet at times have been associated with hepatobiliary inflammation. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was non-distended in size containing mild nonorganized, hyperechoic gallbladder debris and luminal mineral. The cystic and common bile ducts were normal.
REFERRING VET	
Dr. Farooq	
INVOICE	Gastrointestinal
16404	The stomach presented intact wall layering with a normal wall layer ratio. The lumen of the stomach was empty with no signs of ileus, obstruction, or foreign material.
DATE	
3/21/23	



PATIENT	The small intestine presented intact wall layering with segmental to generalized propensity for mildly prominent muscularis layer without evidence of significant intestinal mural hypertrophy, loss of intestinal wall layering, or intestinal masses.
Sprite Bishop	
SPECIES	Normal visible colon wall layers were present with apparent formed feces in lumen.
Feline	Pancreas
BREED	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 were evident.
DSH	Free Abdomen
SEX	No overt lymphadenopathy or peritoneal effusion was present.
FS	ULTRASONOGRAPHIC FINDINGS
AGE	<ul style="list-style-type: none"> • Mild LV myocardial remodeling • Normal left atrium • Mild increased RV outflow velocity
16 years	<ul style="list-style-type: none"> • Chronic renal changes with mild pyelectasia • Probable subtle biliary tree mineralization - considered incidental • Mild nonobstructive gallbladder mineral • Intact yet subjective mild prominent small bowel walls
WEIGHT	
3.5 kg	
INTERPRETED BY	INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS
R. McKenzie Daniel, DVM, DABVP	Overall, normal cardiac structure and function with subjective age-related myocardial changes were present. No overt evidence of HCM criteria was noted. The only source of the murmur was the mild elevated RV outflow velocity, which is essentially a flow murmur. Regardless, the lack of left or right heart chamber enlargement indicates that the heart is stable and does not indicate the need for cardiac medications. Conservative monitoring of the murmur at this stage would be reasonable. Recheck echocardiogram is suggested in 6 months, sooner if clinically indicated or if murmur intensity increases.
IMAGING PERFORMED BY	A largely geriatric abdomen was noted without evidence of significant visceral pathology.
Crystal Hill	Monitoring of urinalysis +/- recheck C/S and baseline UPC level if evidence of proteinuria is suggested.
HOSPITAL NAME	
Governors Road Animal Hospital	
REFERRING VET	
Dr. Farooq	
INVOICE	Given the possibility of hyperthyroidism in this patient, serial monitoring of renal parameters is advised. Assessment of systemic BP and CRD therapy would be reasonable.
16404	Suspect potential intestinal patient variant, although monitoring for gastrointestinal signs going forward is suggested.
DATE	
3/21/23	



PATIENT

Sprite Bishop

SPECIES

Feline

BREED

DSH

SEX

FS

AGE

16 years

WEIGHT

3.5 kg

INTERPRETED BY

R. McKenzie Daniel,
DVM, DABVP

**IMAGING
PERFORMED BY**

Crystal Hill

HOSPITAL NAME

Governors Road
Animal Hospital

REFERRING VET

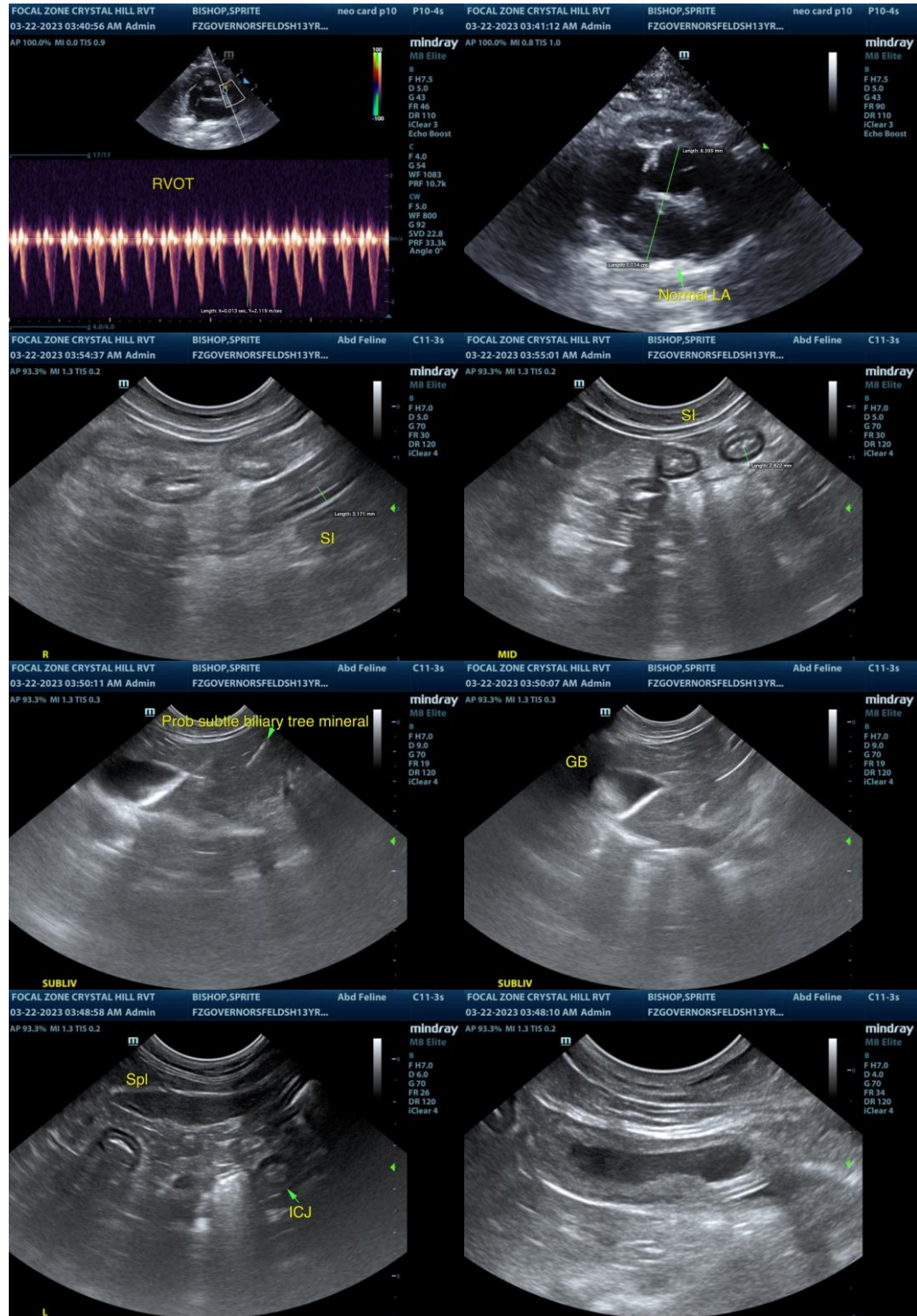
Dr. Farooq

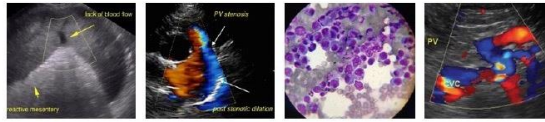
INVOICE

16404

DATE

3/21/23





PATIENT

Sprite Bishop

SPECIES

Feline

BREED

DSH

SEX

FS

AGE

16 years

WEIGHT

3.5 kg

INTERPRETED BY

R. McKenzie Daniel,
DVM, DABVP

**IMAGING
PERFORMED BY**

Crystal Hill

HOSPITAL NAME

Governors Road
Animal Hospital

REFERRING VET

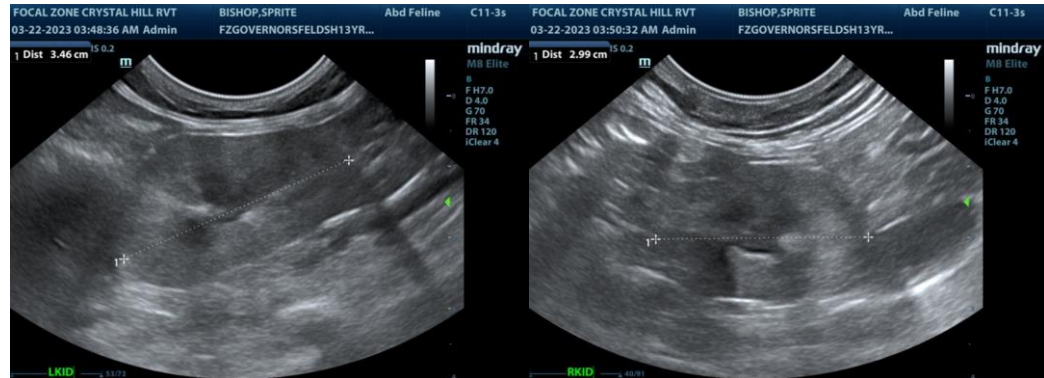
Dr. Farooq

INVOICE

16404

DATE

3/21/23



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