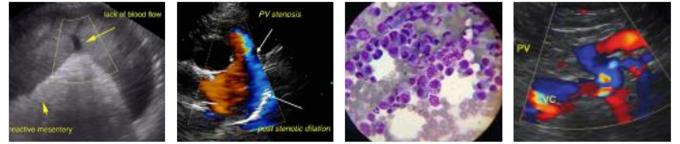
SonoPath
Clinical Sonography & Telecytology

EDUCATIONAL TELECONSULTATION SERVICES™



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

PATIENT

Vivie Fugarazzo

SPECIES

Canine

BREED

Norfolk

SEX

FS

AGE

7 years

WEIGHT

23 lbs.

INTERPRETED BY

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

IMAGING PERFORMED BY

Jessica Miller

HOSPITAL NAME

Marsh AH

REFERRING VET

Dr. Milwicki

INVOICE

15702

DATE

12/27/22

PRESENTING CLINICAL SIGNS

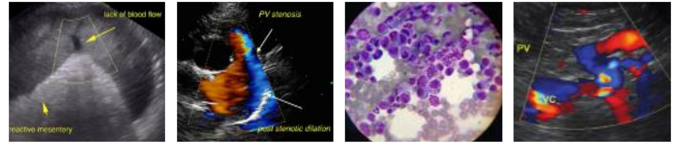
Cardiomegaly, Murmur. Hx of cystotomy- Calcium oxide stones No current meds.
Abnormal PE/Chem/CBC/UA Results: ALP 1339

ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.3	28-40	40-100	<0.6
PATIENT	5.3	3.1		2.0	41	72.5	0.15
CANINE CARDIAC PARAMETERS	**HR** (BPM)	**AV VMAX** (m/s)	**PV MAX** (m/s)	**BODY WEIGHT** (kg)	**LA** 2D short axis Base view (cm)	**LVIDd** Avg; 2D and m-mode short axis (cm)	**LVIDs** Avg; 2D and m-mode short axis (cm)
NORMAL PARAMETER	50-100	0.7-1.7	0.7-1.6				
PATIENT	134	1.6	0.85		3.8	3.54	

Cardiac Presentation

The echocardiogram in this patient demonstrated moderately enlarged **left atrial** size based on 3 different LA measurement methods. The cranial and caudal **mitral** valve leaflets presented moderate thickening consistent with endocardiosis. No evidence of valvular prolapse. Doppler indicated measurable moderate eccentric insufficiency. The **left ventricle** presented normal thicknesses with linear contour with mild to moderate increased left ventricle volume. 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 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 mild thickening with mild TR 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). No visible **pericardial** or free pleura fluid was noted. No echographically detectable evidence of infiltrative disease was visible. The cranial **mediastinum and pericardial regions** were free of masses in the visible window.



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Urinary System

The urinary bladder was normal in size and tone. Anechoic urine was present with mild, dependent mineral to small calculi. No evidence of sonographically significant cystitis. The urethra exhibited normal structure and tone to a depth of 3.0 cm. No evidence of urinary bladder tumors.

The area of the aortic trifurcation was free of pathology.

Normal size and margination were present in the kidneys. A normal 1:3 cortex / medulla ratio was maintained. The medulla and cortices were uniform in texture with some increased echogenicity and moderate loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation or pyelectasia was present. Non-obstructive, mild renolithiasis was present primarily in the lateral diverticuli. The left kidney measured 4.6 cm in length. The right kidney measured 4.6 cm in length.

Adrenal Glands

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.53 cm width at the caudal pole and 0.63 cm width at the cranial pole. The right adrenal gland was borderline prominent in size based on caudal pole width measurement in light of body weight. Symmetrical capsule contour was noted with homogeneous parenchyma. No evidence of neoplastic criteria. The right adrenal gland measured 0.57 cm width at the caudal pole and 0.50 cm width at the cranial pole.

Spleen

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.

Liver/ Gallbladder

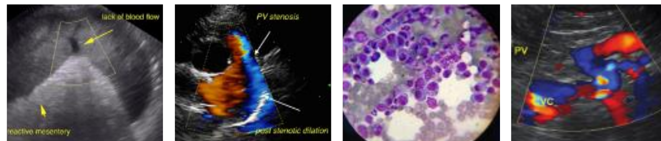
The liver presented enlarged in size. The parenchyma of the liver was subjectively normal in echogenicity compared to the spleen and renal cortices. The liver parenchyma was uniform with a mildly coarse echotexture. The capsule of the liver was symmetrically rounded to mildly swollen in margination. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was non-distended in size with primarily anechoic luminal content. The cystic and common bile ducts were normal.

Gastrointestinal

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.

The small intestine presented intact wall layering with 1:3 muscularis/mucosa ratio. The lumen of the small intestine was empty with no signs of ileus, obstruction, or foreign material.

Normal visible colon wall layers were present with apparent formed feces in lumen.



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Pancreas

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.

Free Abdomen

No overt lymphadenopathy or peritoneal effusion was present.

ULTRASONOGRAPHIC FINDINGS

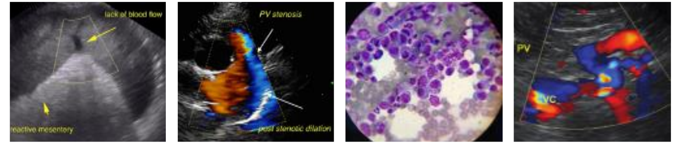
- Chronic mitral valve disease (ACVIM B2)
- TV insufficiency - estimated pulmonary pressure gradient suggestive of borderline to mild increased pulmonary pressure, yet not consistent with clinical pulmonary hypertension
- Recurrent cystic nonobstructive calculi
- Bilateral nonobstructive medullary renolithiasis
- Borderline prominent right adrenal gland - nonspecific
- Vacuolar hepatopathy pattern - benign

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The moderate increased LA/ LV size indicates that the current and future risk of complications secondary to MR is moderately elevated. Pimobendan 0.3 mg/kg PO BID is recommended. ACE inhibitor may be considered if systemic BP >130 (not advised if BP <130). Omega 3 fatty acids and mild salt restriction may prove beneficial. Baseline monitoring of resting respiration rate is suggested. Given no evidence of radiographic pulmonary edema, there is no indication for diuretic therapy, yet prognosis is highly variable, and serial sonographic monitoring is recommended. Recheck echocardiogram is suggested in 6 months, sooner if clinical signs arise.

Urine C/S on a sterile urine sample is recommended to assess for or rule out underlying infection. Potentially, this patient may be passing small amounts of mineral from the kidneys into the urinary bladder. Renal or urinary diet may be considered.

Hepatosupportive medications including Denamarin and Ursodiol are suggested. An adrenal workup could be considered if clinical signs suggestive of Cushing's Syndrome arise.



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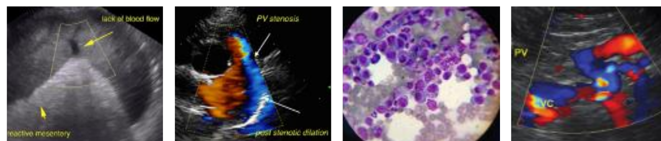

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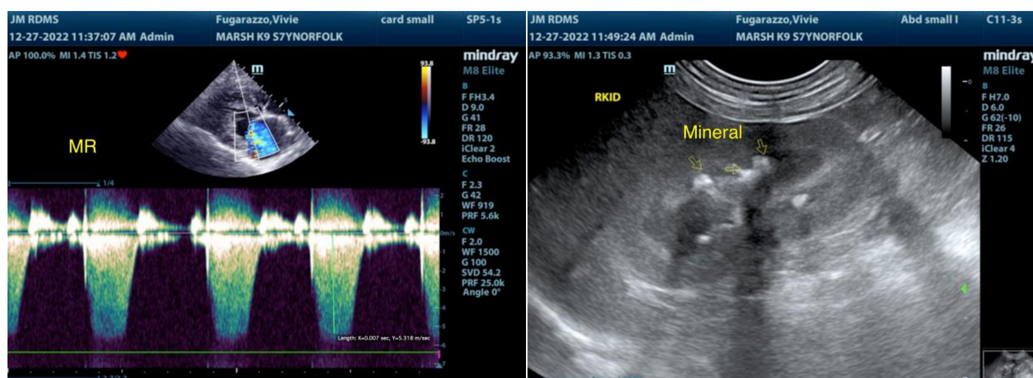

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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