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Clinical Sonography & Telecytology
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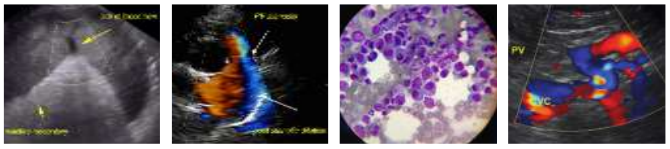

SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT
Maxi Desovitz

SPECIES
Canine

BREED
Cavalier King Charles Spaniel

SEX
MN

AGE
9 years

WEIGHT
29 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
12892

DATE
12/28/21

PRESENTING CLINICAL SIGNS

Hx of PLE- controlled. Recent thrombocytopenia. Hx of calcinosis cutis- resolved. Known bladder stones. Current meds: Chlorambucil, Budesonide, Denamarin, Vetasyl, Tylon, EicosaDerm
Abnormal PE/Chem/CBC/UA Results: Platelet Count 23, NRBC 2, AST 13, Alk Phos 21124, GGT 40, Magneium 1.4, Chol 360, Triglyc 431, PrecisionPSL 344 UA: Protein +1, Occult Blood +2, RBC 4-10 SG: 1.030

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	<1.6	28-40	40-100	<0.6
PATIENT	6.0	<2.0	1.35	1.24	39.0	71.0	0.16
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	BELOW	BELOW	BELOW	BELOW
PATIENT	105	1.0	0.8		3.4	3.0	

Cardiac Presentation

The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 different LA measurement methods. Chamber volumes and echogenicity were normal. The cranial and caudal **mitral** valve leaflets presented vegetative thickening consistent with endocardiosis. Doppler indicated measurable eccentric insufficiency. The **left ventricle** presented thicknesses with linear contour and was not dilated nor restricted. 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 adequate linear morphology. The **right ventricle** was of normal size (1/3 diameter of LV), chordae structure, myocardial echogenicity and thickness. Trace tricuspid valve insufficiency was present on color doppler. **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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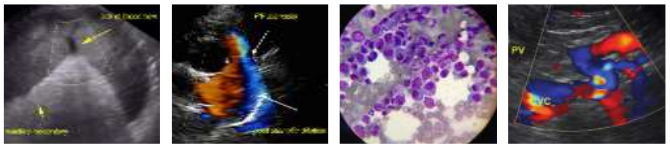

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Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra exhibited normal tone to a depth of 2.0 cm. Several to multiple, hyperechoic echogenicities with distal acoustic shadowing were present in the dependent lumen. No overt evidence of concurrent cystitis was present.

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. Multifocal, pinpoint to coalescing cortical hyperechoic foci were present in both kidneys with generalized increased cortex echogenicity. No evidence of pyelectasia was noted. The left kidney measured 5.6 cm in length. The right kidney measured 6.0 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 2.3 cm length x 0.43 cm width at the caudal pole. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 2.3 cm length x 0.49 cm width at the caudal pole.

Spleen

The spleen exhibited normal size and contour and generalized parenchyma heterogeneity with multifocal, pinpoint to coalescing hyperechoic parenchyma foci. A solitary, nonspecific anechoic to hypoechoic nodule was noted in the mid spleen, measuring 0.66 cm in diameter.

Liver/ Gallbladder

The liver exhibited mild generalized enlargement with normal structure and contour. The liver exhibited subjective generalized parenchyma echogenicity compared to the falciform fat and spleen with a moderate coarse echotexture and subjective mild to benign parenchymal remodeling. The hepatic and portal vasculature were normal in appearance without signs of congestion. Mild to moderate mineralized gallbladder debris was present without evidence of gallbladder distention or inflammatory criteria. The common bile duct exhibited generalized mild to moderate distention approaching the level of the duodenal papilla with a solitary calculus present In the distal common bile duct just proximal to the duodenal papilla. The common bile duct calculus measured 1.1 cm in width with common bile duct dilation measuring 0.63 cm.

Gastrointestinal

The stomach presented intact wall layering with a normal wall layer ratio. Minor retained chyme was present.

The small intestine presented intact wall layering and maintained a 1:3 muscularis/mucosa ratio with subjective segmental increased mucosa echogenicity. The duodenum wall width measured 0.43 cm. The jejunum wall width measured 0.35 cm.

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

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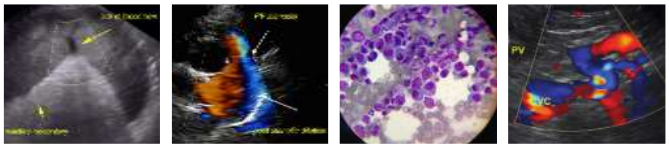

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Pancreas

The pancreas was prominent in size with normal contour and isoechoic to heterogeneous parenchyma compared to adjacent omentum. No signs of active inflammation or neoplasia.

Free Abdomen

No overt lymphadenopathy or peritoneal effusion was present.

ULTRASONOGRAPHIC FINDINGS

Primary Findings

- Chronic mitral valve disease (ACVIM B1)
- Minor tricuspid valve Insufficiency
- Cystic calculi - previously documented
- Bilateral chronic renal changes with multifocal to coalescing cortical hyperechoic foci
- Splenic focal to coalescing hyperechoic parenchyma foci with nonspecific nodule
- Chronic hepatopathy with parenchymal remodeling - subjectively benign
- Mild gallbladder mineralized debris / cholelithiasis with solitary common bile duct calculus approaching duodenal papilla
- Heterogeneous to prominent pancreas

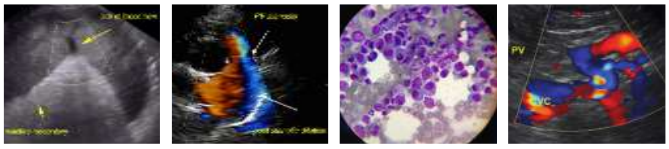
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The cause of the murmur is chronic degenerative valvular changes with secondary eccentric mitral valve insufficiency. The lack of left atrial enlargement implies that the risk of complication secondary to mitral valve insufficiency is low at this time and, without current clinical signs, indicates that medical therapy is not required. Conservative monitoring is recommended with a recheck echocardiogram in 6-12 months, sooner if clinical signs suggestive of heart disease develop.

Further renal staging to include urine C/S and protein: creatinine ratio on sterile urine sample may be considered.

Both the renal cortical and splenic hyperechoic foci may indicate areas of splenorenal fibrosis, microinfarction, or mineralization. The nonspecific splenic nodule is suggestive of potential splenic cyst, acute infarction, lymphoid hyperplasia, or hematopoiesis with neoplastic criteria considered unlikely. However, sonographic monitoring of the splenic nodule for evidence of progression would be appropriate.

Age-related pancreatic changes with potential for chronic to low-grade pancreatitis is possible.



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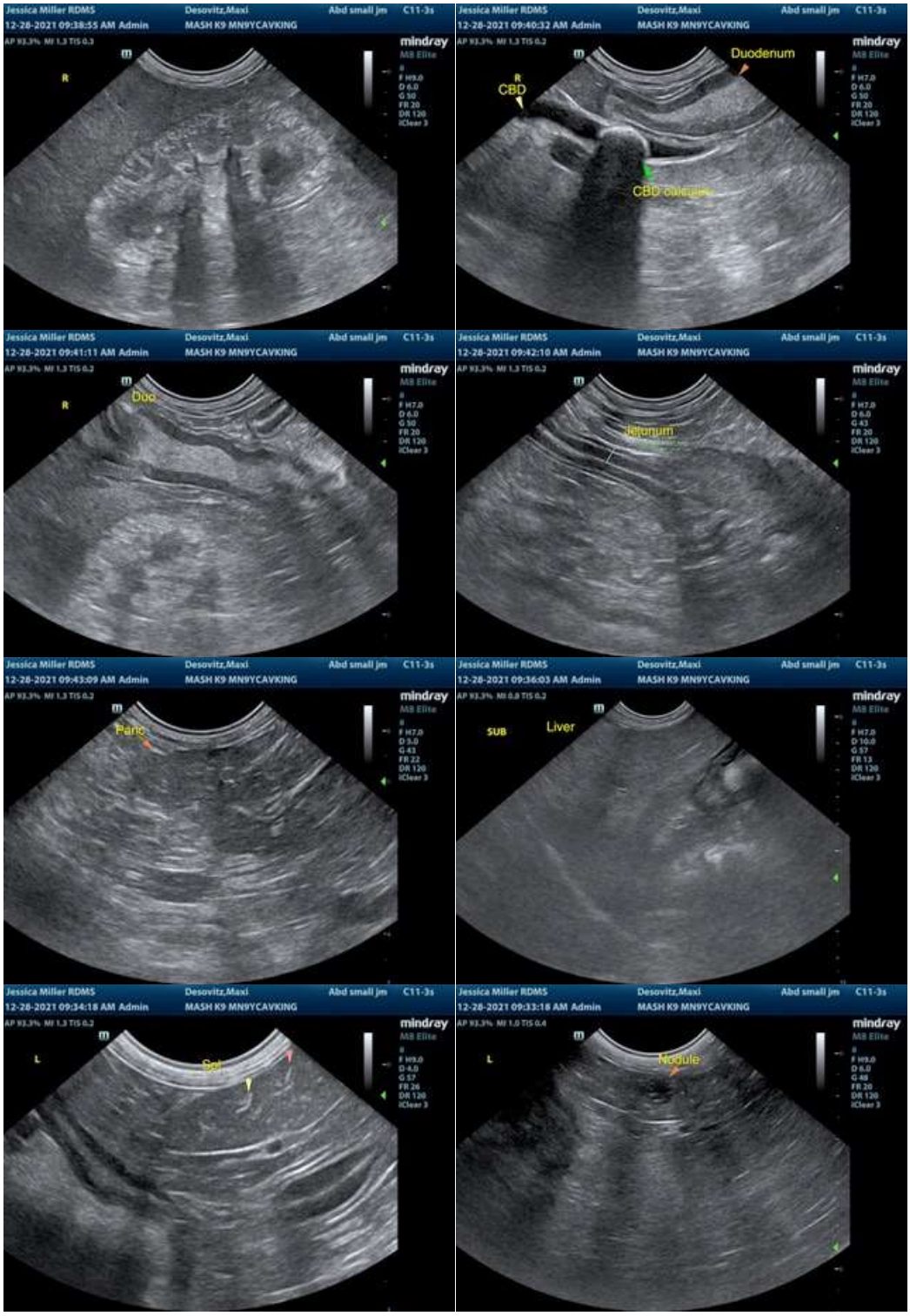
Ursodiol therapy is recommended with close monitoring for evidence of increased hepatic enzymes or cholestasis with recheck sonogram to reassess common bile duct calculus If these clinical signs are noted.



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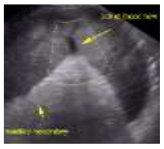
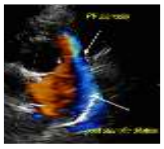
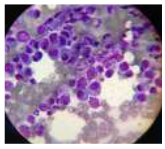
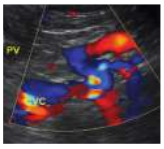

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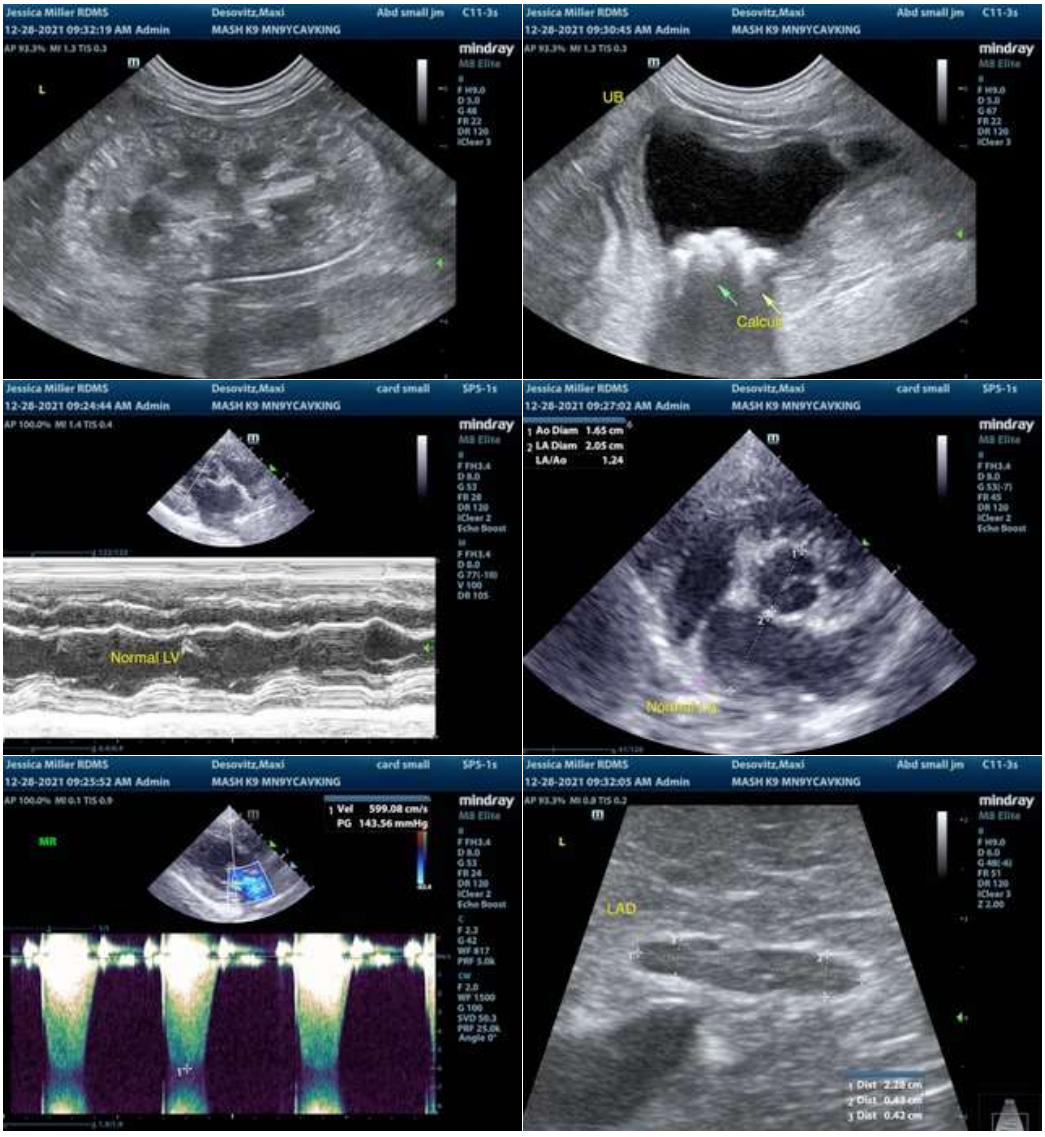

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

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