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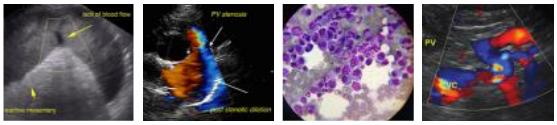


ANIMAL SOUNDS NW
MOBILE VETERINARY ULTRASOUND
IMAGING PERFORMED BY
AnimalSoundsNW.com 541-357-9423

PATIENT
Pumpkin Godsey

SPECIES
Canine

BREED
Beagle

SEX
FS

AGE
12yr

WEIGHT
26lb

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

IMAGING PERFORMED BY
Jenna Walsh CVT

HOSPITAL NAME
Albany Animal Hospital

REFERRING VET
Dr. Flanagan

INVOICE
13644ag

DATE
04/28/2023

PRESENTING CLINICAL SIGNS

increased respiratory effort and frequency, no murmur. on benazapril for high blood pressure Heart Rate and Respiratory Rates panting and 140 hr Blood Pressure Measurments unable to get Current Medications benazapril and apoquel. recently started on pimobendan and furosemide Radiographic Findings Increased pulmonary densities, enlarged liver shadow (seen on xrays from Rivers Edge) Primary Question/Differential to Be Answered in This Exam primary pulmonary vs cardiac disease, Increased liver size due to right side heart disease or other cause?

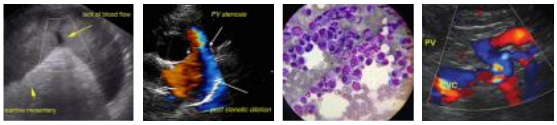
Abnormal PE/Chem/CBC/UA Results: alkp phos 1304

ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN AND HEART

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	6.0			1.1	38	74	0.33
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	NM	1.8	1.4		3.4	3.4	

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 mild thickening consistent with endocardiosis. Doppler indicated mild eccentric insufficiency. Borderline increased measured MR velocity was present. 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. 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, trigone, cystourethral junction, and visible pelvic urethra to a depth of 3 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.

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 mild loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation was present. The left kidney measured 5.2 cm in length. The right kidney measured 5.7 cm in length.

The area of the aortic trifurcation was free of pathology.

Adrenal Glands

The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.49 cm width at the caudal pole and 2.0 cm length. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 0.34 cm width at the caudal pole and 2.0 cm length.

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 moderate to markedly 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. Intermittent well demarcated uniform hyperechoic nodules were present, an example measuring 1.0 cm in diameter. 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 and mild non-organized hyperechoic debris. No evidence of gallbladder or peripheral gallbladder inflammation was present. 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.

Pancreas

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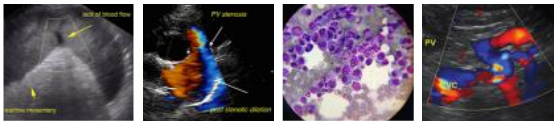

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The pancreas was normal in size and contour with isoechoic to heterogeneous parenchyma compared to adjacent omentum, likely consistent with age related changes and considered incidental. No signs of active inflammation or neoplasia.

Free Abdomen

No omental masses, overt lymphadenopathy or peritoneal effusion was present.

ULTRASONOGRAPHIC FINDINGS

- Compensated mitral valve disease (ACVIM B1).
- Hepatomegaly with intermittent benign nodules-sonographically suggestive of vacuolar hepatopathy pattern with likely benign lipogranulomas or nodular hyperplasia.
- Gallbladder debris (non-mucocele).
- Mild chronic renal changes.
- Normal bilateral adrenal glands.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Overall normal cardiac structure/function with mild compensated MR. No LV systolic dysfunction or evidence of clinal pulmonary hypertension was present. The lack of left atrial enlargement implies that the risk of complication secondary to mitral valve insufficiency is relatively low at this time. The lack of clinical pulmonary hypertension or left/right heart chamber enlargement indicate that the respiratory abnormalities are non-cardiogenic in origin. Medical therapy is not required at this stage. As needed respiratory support is recommended.

Prognosis at this stage is variable and serial sonographic monitoring is recommended with a recheck echocardiogram in 8-12 months, sooner if clinical signs suggestive of heart disease develop.

No overt suspicion for primary adrenal disease given lack of reported clinical signs i.e., PU/PD, polyphagia etc. No evidence of intra-abdominal neoplastic criteria. Hepatosupportive medications such as Denamarin and Ursodiol may prove beneficial.

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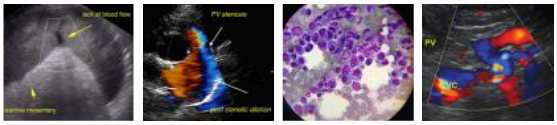

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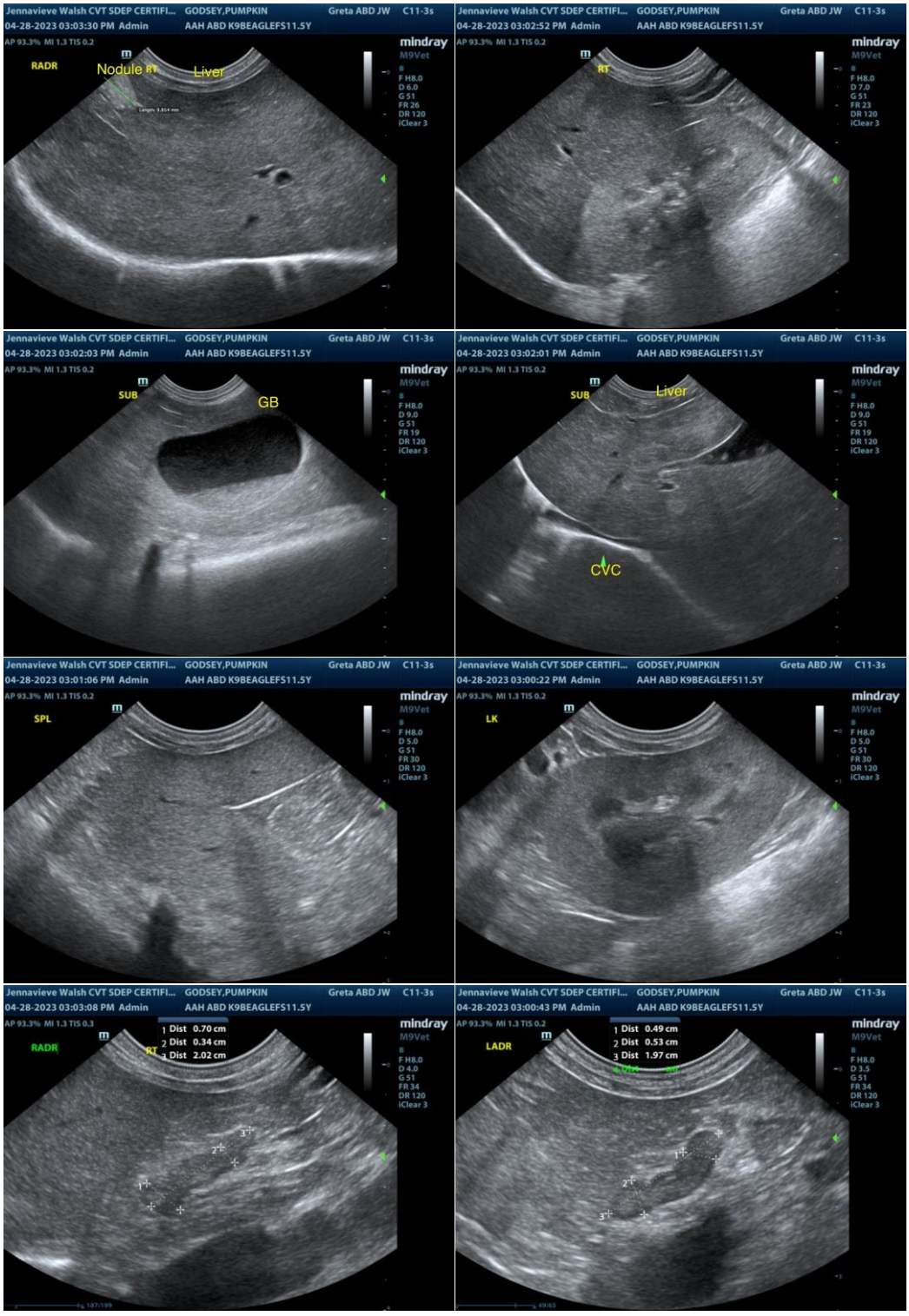

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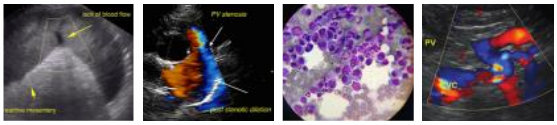

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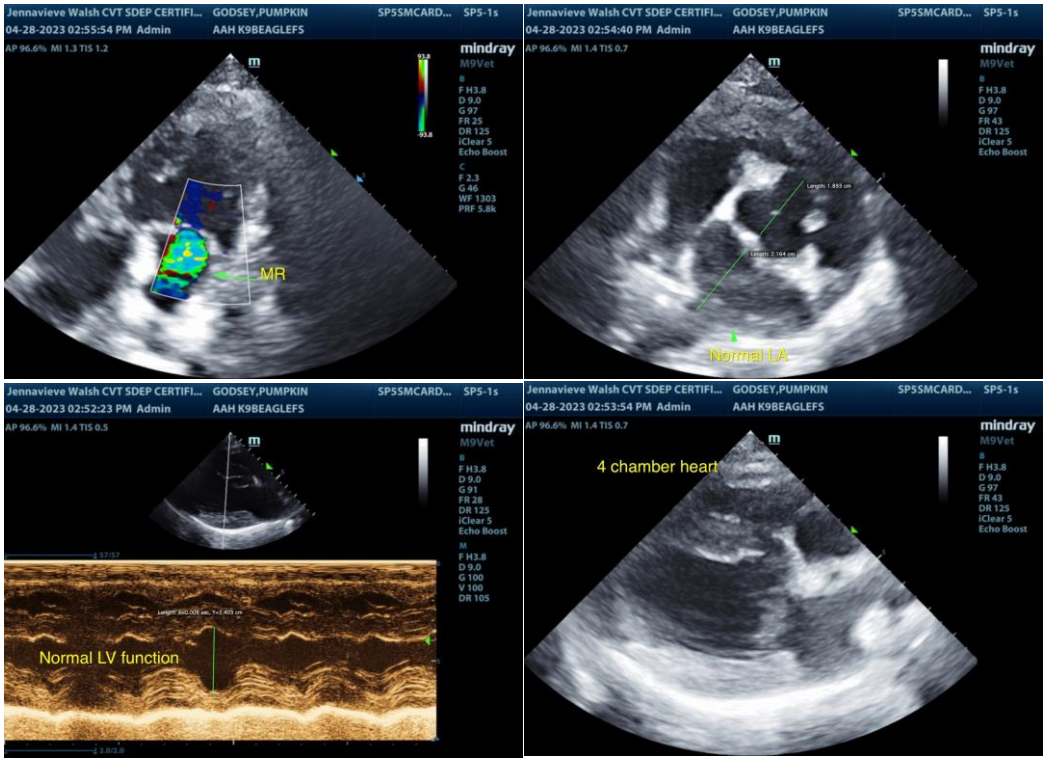

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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