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Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
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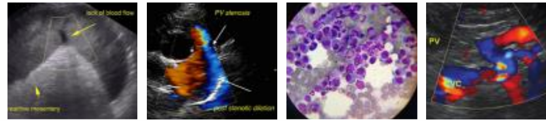


ANIMAL SOUNDS NW
MOBILE VETERINARY ULTRASOUND
IMAGING PERFORMED BY
AnimalSoundsNW.com 541-357-9423

PATIENT

Conor (Dr Aher) Aher

SPECIES

Canine

BREED

Pit Bull

SEX

MN

AGE

8yr

WEIGHT

78lb

INTERPRETED BY

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

IMAGING PERFORMED BY

Jenna Walsh, CVT

HOSPITAL NAME

VCA Salem Animal Hospital

REFERRING VET

Dr Giambuzzi

INVOICE

14631ag

DATE

08/16/2023

PRESENTING CLINICAL SIGNS

Patient presented to the ER for trouble breathing and pale gum. O was out running errands for a couple hours and came home to Conor like this. He was completely normal this morning. He went for a walk. Pale mm, muffled heart sounds, unable to palpate femoral pulses. Pericardial effusion. Aspirated blood - did not clot. Current Medications Carprofen 75mg BID, Adequan injection once weekly, and joint supplement

Abnormal PE/Chem/CBC/UA Results: ALB 3.6 2.5 - 4.4g/dL ALP 206 20 - 150U/L ALT 153 10 - 118U/L AMY 379 200 - 1200U/L TBIL 0.4 0.1 - 0.6 mg/dL BUN 16 7 - 25 mg/dL CA 9.9 8.6 - 11.8 mg/dL PHOS 4.6 2.9 - 6.6 mg/dL CRE 1.4 0.3 - 1.4mg/dL GLU 158 60 - 110 mg/dL NA+ 143 138 - 160 mmol/L K+ 4.3 3.7 - 5.8 mmol/L TP 5.6 5.4 - 8.2 g/dL GLOB 2.0 2.3 - 5.2 g/dL WBC 9.98 6 - 17 10^9/L LYM 0.84 1 - 4.8 10^9/L MON 0.59 0.2 - 1.5 10^9/L NEU 8.39 3 - 12 10^9/L EOS 0.13 0 - 0.8 10^9/L BAS 0.03 0 - 0.4 10^9/L LYM% 8.5 MON% 5.9 NEU% 84.1 EOS% 1.3 BAS% 0.3 RBC 9.04 5.5 - 8.5 10^12/L HGB 17.9 12 - 18 g/dL HCT 60.62 37 - 55 % MCV 67 60 - 77 fL MCH 19.7 19.5 - 24.5 pg MCHC 29.5 31 - 39 g/dL RDWc 18.5 14 - 20% RDWs 43.8 PLT 185 165 - 500 10^9/L MPV 10.3 3.9 - 11.1 fL PCT 0.19 PDWc 40.2 PDWs 18.2

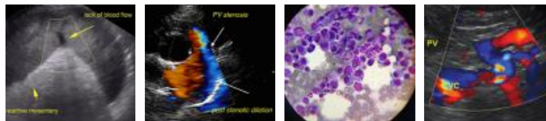
ULTRASONOGRAPHIC EXAMINATION OF THE ABDOMEN AND HEART

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	<1.6	28-40	40-100	<0.6
PATIENT				1.2	30	60	0.3
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	1.0	1.0		3.7	3.7	

Cardiac Presentation

Mild volume pericardial effusion without overt evidence of current diastolic collapse of the right atrial free wall was present. A non-homogenous well demarcated lesion associated with the right atrial free wall and right atrioventricular groove was present measuring ~ 4.0 cm in diameter. LV function was subjectively adequate yet mildly depressed. The left atrium was normal in diameter. Subjective mild decreased LV volume was present with mild LV pseudohypertrophy. The pulmonic and aortic valves were overtly normal in appearance. Normal measured LVOT/RVOT outflow velocities were present. No obvious arrythmia was present.

Urinary System



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The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra 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 and normal corticomedullary definition were maintained. The echogenicity of the cortex was similar to or slightly less than normal liver parenchyma while the medulla echogenicity was hypoechoic to the cortex with no evidence of pelvic dilation. The left kidney measured 7.6 cm in length. The right kidney measured 7.7 cm in length.

The area of the aortic trifurcation was free of pathology.

Adrenal Glands

A subtle mildly expansive mildly non-homogenous hyperechoic nodule was present in the cranial left adrenal gland with mild associated symmetrical capsule expansion measuring 1.7 cm x 1.2 cm. The nodule did not exhibit signs of mineralization or vascular invasion. The overall left adrenal gland measured 0.5 cm width at the caudal pole and 3.8 cm length. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 0.86 cm width at the caudal pole and 3.4 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 was subjectively mild to moderately enlarged in size with symmetrical mildly rounded capsule contour. Overtly normal current vascular volume. The gallbladder was non-distended in size. The gallbladder wall was mildly thickened in appearance consisting of an echogenic double rim corresponding to the inner and outer portions of the wall. This is consistent with gallbladder wall edema. Possible causes may include acute inflammation, edema and anaphylaxis. The gallbladder wall measured 0.45 cm in width. The cystic and common bile ducts were normal.

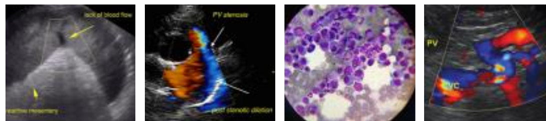
Gastrointestinal

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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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.

Free Abdomen

No omental masses or overt lymphadenopathy was present.

Mild volume anechoic ascites was present with generalized normal omental echogenicity.

ULTRASONOGRAPHIC FINDINGS

- Non-homogenous right atrial free wall/right atrioventricular groove mass.
- Mild volume pericardial effusion.
- Hepatomegaly with mild gallbladder wall edema-suspect secondary to passive congestion.
- Sonographically unremarkable spleen.
- Small volume ascites.
- Subtle left adrenal nodule - probable adenoma

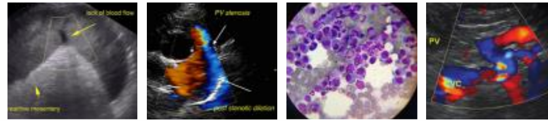
INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The cause of the clinical signs in this patient is suspect previous cardiac tamponade due to pericardial effusion secondary to cardiac neoplasia associated with the right atrial free wall/right atrioventricular groove. Given pericardial tap prior to sonographic assessment, some relief of pericardial effusion and cardiac tamponade is suspected. The most likely tumor given this location is hemangiosarcoma although other tumor types are possible although less likely.

Correlation with pending effusion analysis and cytology if possible is suggested. Fluid resuscitation may be considered given evidence e of LV pseudohypertrophy and decreased LV volume. A limiting factor in this case is often recurrent pericardial hemorrhage and referral for pericardial window/ subtotal pericardiectomy as well as oncology consult for potential chemotherapeutic, or radiation options could be considered.

No overt indication for cardiac medications. OTC herbal supplement Yunnan Baiyao may help decrease the risk of bleeding.

Unfortunately, a very guarded to unfavorable long term prognosis is indicated given potential for recurrent tamponade, malignant arrythmias and/or potential sudden death.



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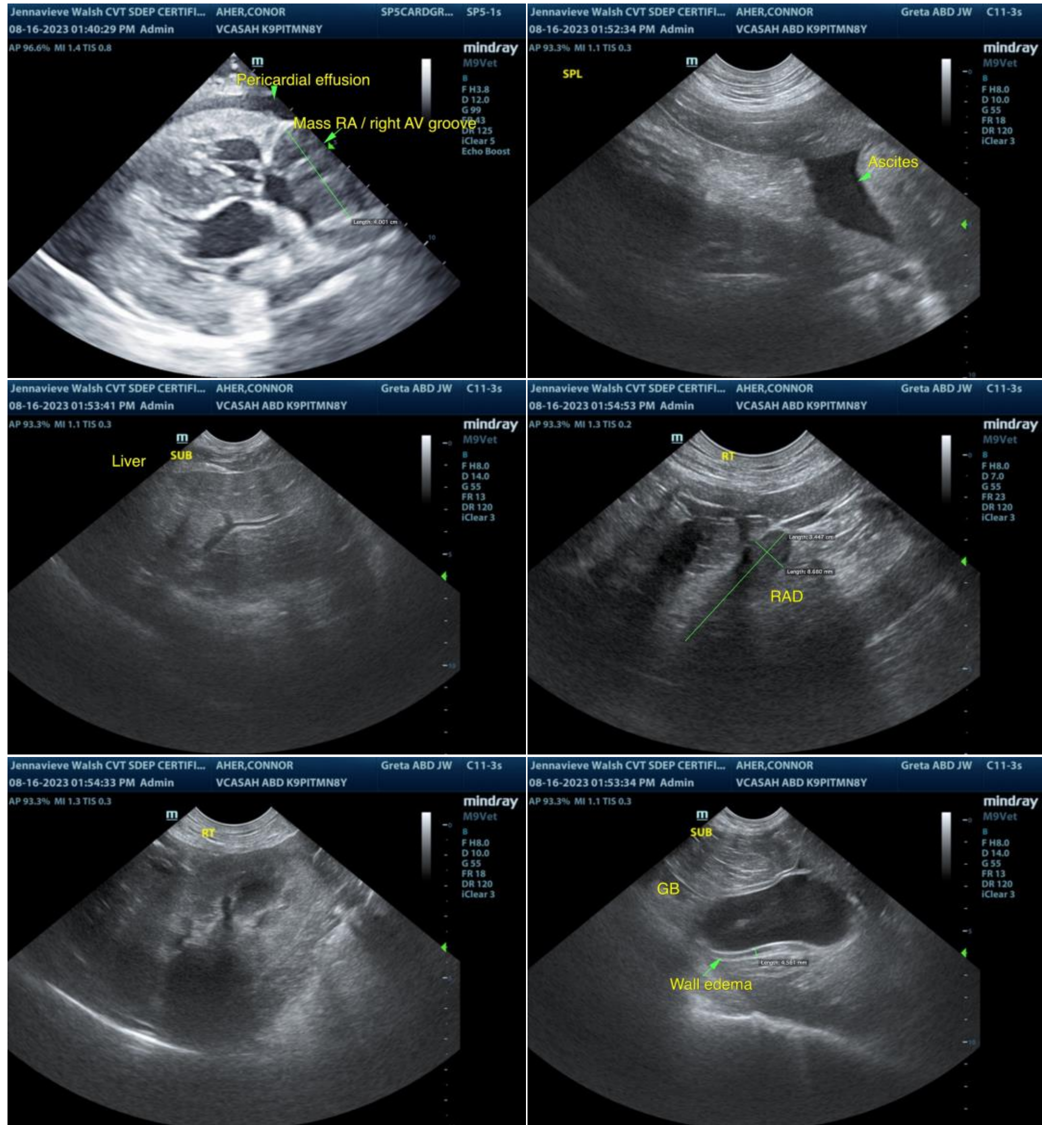

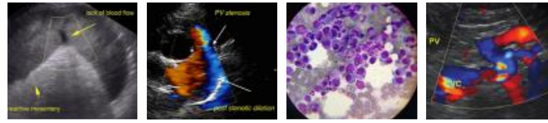

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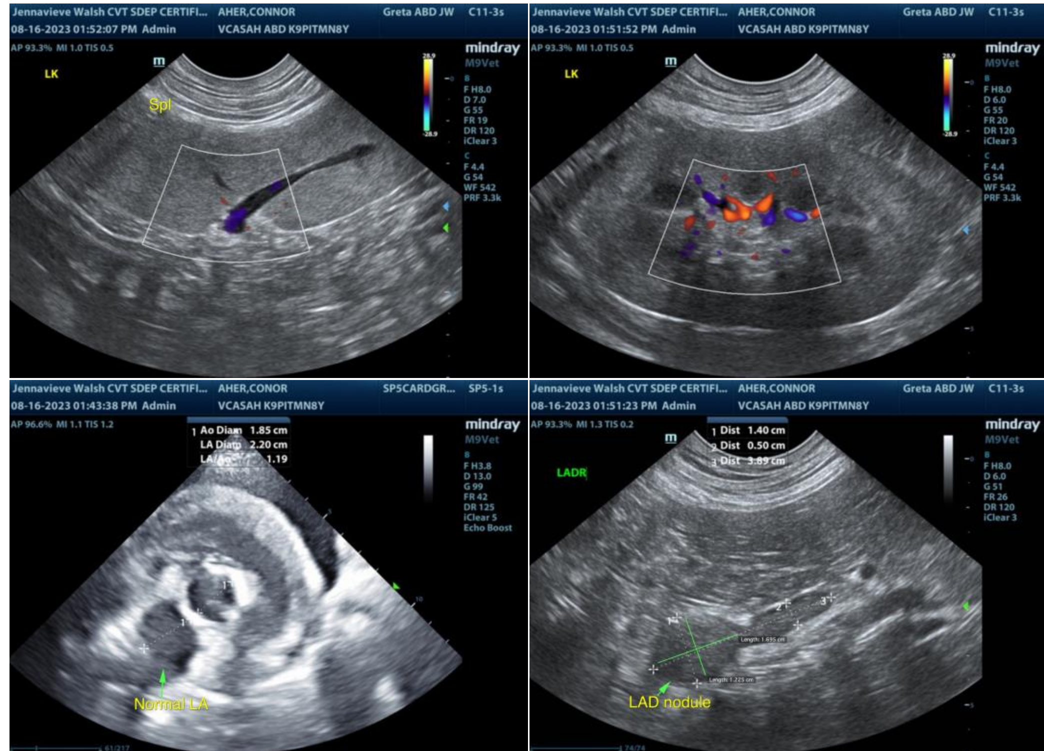

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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