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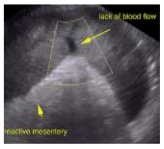

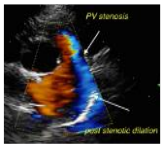

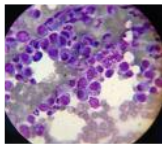
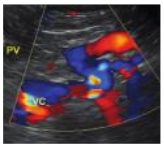

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1-800-838-4268 info@sonopath.com

PATIENT

Luci Carlson

SPECIES

Canine

BREED

Cocker Spaniel

SEX

F/S

AGE

13 years 3 months

WEIGHT

9.7 kg

INTERPRETED BY

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

IMAGING PERFORMED BY

Dr. Brian Barnes

HOSPITAL NAME

Westview VH

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INVOICE

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PRESENTING CLINICAL SIGNS

Problem list TDX: 1) DMVD Stage B2 2) Trivial TR, 3) Trace PI 4) No PH 5) Bilateral chronic renal changes, with cortical cyst, mild left kidney pyelectasia 6) History of urinary incontinence 7) Enlargement of vulva possible due to DES Tx. 8) Worsening of cough particularity at night, Dynamic Collapsing trachea Treating with: . Spironolactone 25 mg x 1/2 BID VetMedin 2.5 mg BID Theophyline 100 mg 2 in AM, i in PM Gabapetin 100 mg x 2 at bedtime Codeine as needed Lst Echo and US Feb 2023

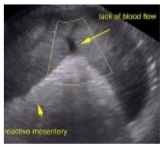
Abnormal PE/Chem/CBC/UA Results: Routine R/C of Echo and AUS Has history of coughing , "like something caught in the throat." Can easily induce a tracheal cough with digital palpation. Grade 3-4/6 AV murmur with PMI over Left hemithorax. Heart sinus arrythmia. No adventitial lung sounds. Has been on DES for urinary incontinence in the past but vulva got enlarged. 1 per week.

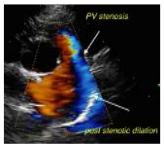
ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

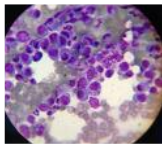
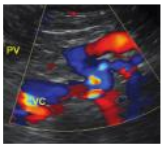
CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.3	28-40	40-100	<0.6
PATIENT	5.0	2.5		2.25	55	86	0.4
CANINE CARDIAC PARAMETERS	**HR** (BPM)	**AV VMAX** (m/s)	**PV MAX** (m/s)	**BODY WEIGHT** (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	1.2	0.8		5.0	4.2	

Cardiac Presentation

The echocardiogram in this patient demonstrated moderate to progressive enlarged **left atrial** size based on 2 separate LA measurement methods. Minor deviation of the interatrial septum towards the right atrium, suggestive of increased left atrial pressure, was present. Chamber volumes and echogenicity were normal. The cranial and caudal **mitral** valve leaflets presented moderate thickening consistent with endocardiosis. Doppler indicated measurable eccentric insufficiency. The **left ventricle** presented normal thicknesses with linear contour with mildly progressive moderate increased LV 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





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flow and subjective structural integrity. Normal measured LVOT velocity was noted. 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). Normal measured RVOT velocity was noted. 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. There was no evidence of arrhythmia.

Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 3.0 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.

Mild prominent uterine stump was noted without evidence of uterine stump lumen fluid, measuring 1.5-2.0 cm diameter.

No evidence of pathology in the area of the aortic trifurcation.

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. Areas of medullary to pelvic mineral were noted. Mild left kidney hydronephrosis was present. Mild right kidney pyelectasia was noted. The left kidney measured 5.5 cm in length. The right kidney measured 5.7 cm in length.

Adrenal Glands

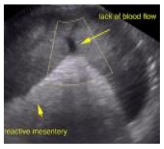
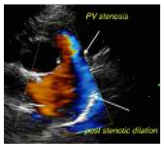
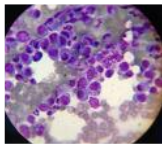
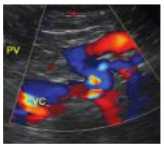
The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 1.8 cm length x 0.51 cm width at the caudal pole. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 2.1 cm length x 0.57 cm width at the caudal pole.

Spleen

The spleen exhibited primarily finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. A well-defined, symmetrical, hyperechoic nodule was present measuring 1.4 cm in diameter. 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 or neoplastic changes were not noted. The hyperechoic nodules tend to trend benign and are most consistent with benign hyperplasia or myelolipomas.

Liver/ Gallbladder

The liver was moderately enlarged with a symmetrical capsule contour and generalized mild nonhomogeneous hepatic parenchyma echogenicity and echotexture. There were no visualized

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hepatic masses or nodules. Normal hepatic vascular volume was noted. The gallbladder was non-distended in size containing anechoic content with moderate, nonorganized, hyperechoic gallbladder sediment. 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

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

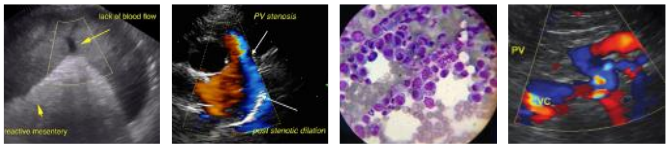
An unspecified, nonhomogeneous mass was present in the area of the left retroperitoneal space adjacent to effacing, or possibly originating from, the caudal aspect of the left kidney measuring ~7.0 cm diameter. No overt omental lymphadenopathy was noted. There was no evidence of peritoneal or retroperitoneal effusion.

ULTRASONOGRAPHIC FINDINGS

- Mildly progressive chronic mitral valve disease (ACVIM B2-B2+)
- TR - estimated pulmonary pressure gradient suggestive of mild increased pulmonary pressure, not overtly consistent with clinical pulmonary hypertension
- Mildly prominent uterine stump
- Bilateral chronic renal changes exhibiting medullary / pelvic mineral, mild left kidney hydronephrosis with mild right kidney pyelectasia
- Intact overtly normal bilateral adrenal glands
- Unspecified left retroperitoneal mass
- Benign splenic myelolipoma
- Subjective static hepatomegaly
- Moderate gallbladder sediment - not consistent with mucocele criteria

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Subjective mild progression of cardiac changes was noted compared to the previous study based on LA/AO MAX and LV measurements. There is a continued increased risk for developing CHF, given this



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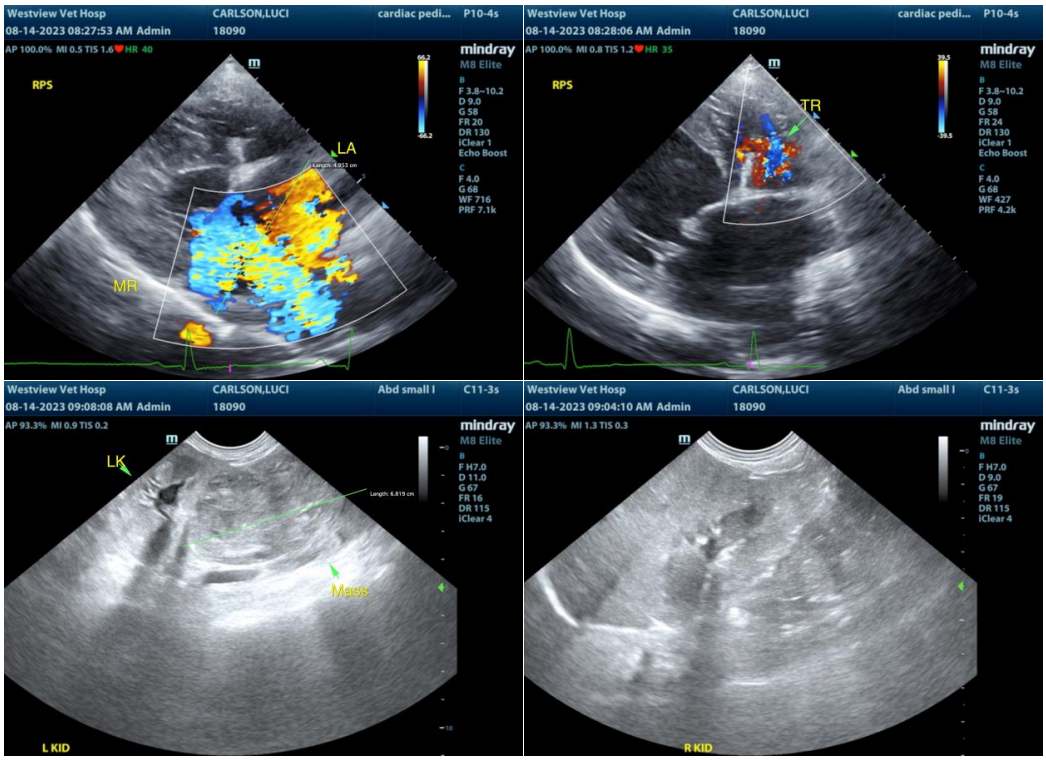
presentation. Continued Pimobendan with a recommended addition of Lasix 1.0-2.0 mg/kg PO BID to current Spironolactone diuretic therapy, monitoring of resting respiration rate going forward, and as-needed therapy for collapsing trachea is suggested. ACE inhibitor medication may be considered if systemic BP >130, (not advised if <130). Anesthetic risk is elevated. Serial sonographic monitoring is advised with an echocardiographic recheck recommended in 4-6 months, sooner if progressive clinical signs suggestive of CHF are noted.

The mildly prominent uterine stump was not consistent with stump pyometra criteria and is of unclear clinical significance. Some contribution to the prominent uterine stump may possibly be secondary to DES therapy if long-term.

Assuming normal clotting status and using a 25-gauge needle, FNA cytology of the left retroperitoneal mass is warranted for further clarification. Three-view chest radiographs are suggested if not recently done.

Suggested anesthetic protocol may include opioid or Benzodiazepine pre-med, induction with Propofol or Alfaxalone, and appropriate gas anesthesia with avoidance of alpha 2 agonists.



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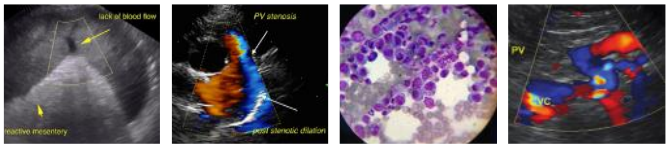

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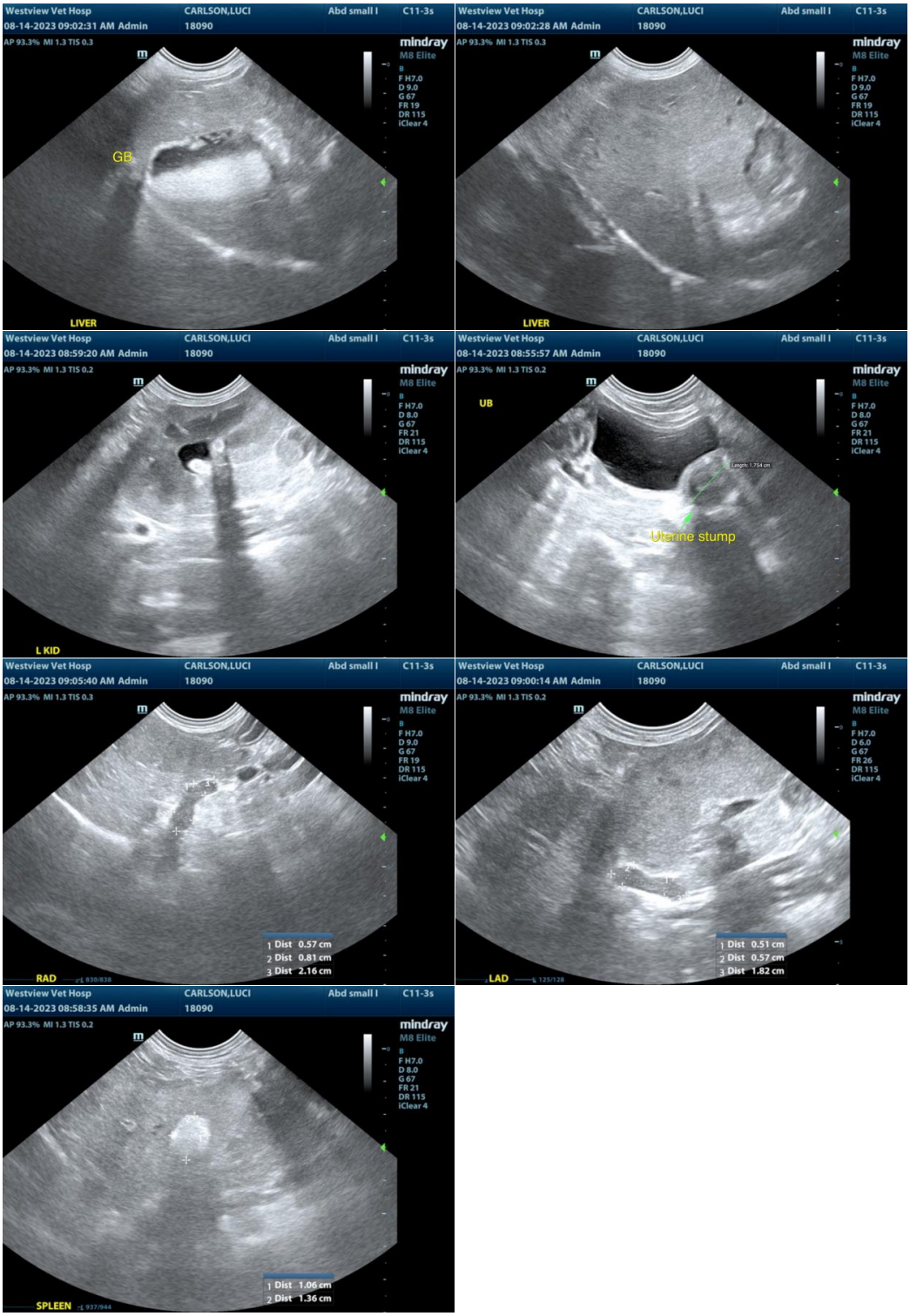

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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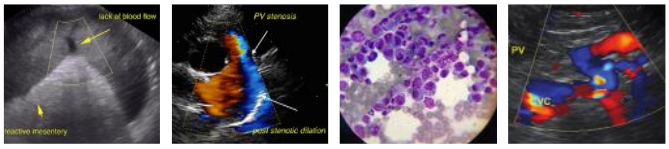

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Thank you for this referral. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance, please contact me.

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