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Clinical Sonography & Telecytology
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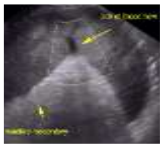
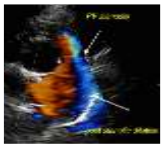
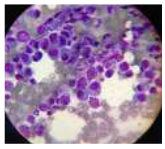
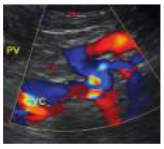





SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT

Marshall Case

SPECIES

Feline

BREED

DSH

SEX

MN

AGE

15 years

WEIGHT

23 lbs.

INTERPRETED BY

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

IMAGING PERFORMED BY

Diane McFadden

HOSPITAL NAME

Newton VH

REFERRING VET

Dr. Kim

INVOICE

13173

DATE

1/27/22

PRESENTING CLINICAL SIGNS

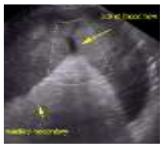
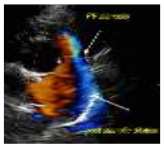
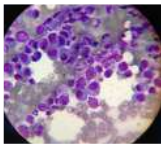
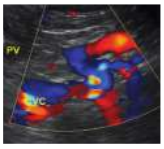
pleural effusion, respiratory distress; S7 mineral opacity in caudal abdomen on rads, small kidneys. IV furosemide 2mg /kg q 12 hours and 0xygen
Abnormal PE/Chem/CBC/UA Results: wnl

ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

FELINE CARDIAC PARAMETERS	**BODY WEIGHT** (kg)	**HR** (BPM)	**IVSd** (cm)	**LVIDd** (cm)	**LVWd** (cm)	**FS** (%)	**EF** (%)
NORMAL PARAMETER	------	150-240	0.3-0.6	1.0-2.1	0.25-0.6	35-67	80-100
PATIENT		NM	0.57	1.7	0.56	41.2	75.4
FELINE CARDIAC PARAMETERS	**LA/AO** (Boon)	**LA/AO HEART BASE** (Sisson)	**LA** 2D 4-chamber long axis AS to FW (Sisson) (cm)		**LVOT VEL.** (m/s)	**RVOT VEL.** (m/s)	**IVRT** (m/)
NORMAL PARAMETER	<1.5	0.88-1.79	0.7-1.7		<1.6	<1.3	40-60
PATIENT	1.4	1.37	1.3		NM	NM	NM
Adapted from June Boon,Veterinary Echocardiography,1998 Sisson D et al. JVIM 1991; 5: 232, Jacobs et al. Am J Vet Res 1985; 46:1705							

Cardiac Presentation

The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 separate LA measurements. The cranial and caudal **mitral** valve leaflets presented normal linear structure and kinetics. The **left ventricle** presented subjective normal thicknesses with linear contour and was not overtly dilated or restricted. Potential for mild LV pseudohypertrophy is possible owing to decreased cardiac 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 and angles 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 and kinetics. 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). Mild to moderate volume pleura free fluid was present without overt evidence of concurrent pericardial free fluid. Overt evidence of cardiac, pericardial or cranial **mediastinal** masses was not definitively evident.

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Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 2.0 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.

The area of the aortic trifurcation was free of pathology.

Normal renal size with asymmetrical margination were present in both kidneys. The renal cortex presented uniformly increased in echogenicity with uniform echotexture. The renal cortex appeared to be hypertrophied resulting in an altered cortex: medulla ratio. Mild loss of corticomedullary distinction was also present. The renal medullary volume was subjectively reduced. Subtle evidence of associated mild increased retroperitoneal echogenicity without evidence of retroperitoneal effusion was present. Mild pyelectasia was noted in the left kidney. The left kidney measured 4.7 cm in length. The right kidney measured 4.5 cm in length.

Adrenal Glands

The left adrenal gland exhibited mild prominent size yet symmetrical contour with uniform hypoechoic parenchyma. The left adrenal gland measured 0.52 cm in diameter. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 0.44 cm in diameter.

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. The spleen measured 0.66 cm width at the level of the hilus. No overt evidence of splenic neoplastic criteria was noted.

Liver/ Gallbladder

The liver was subjectively normal in size, structure, and contour. The liver parenchyma was uniform and hypoechoic to the spleen with a mild coarse echotexture. The hepatic and portal vasculature were normal in appearance without signs of congestion. The gallbladder was non-distended in size with thin walls and 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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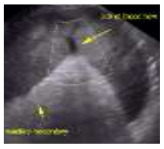
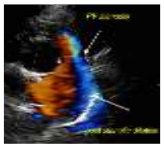
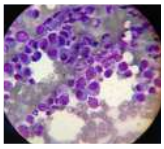
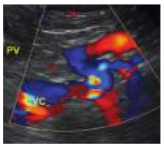

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Pancreas

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

Unspecified nonhomogeneous to hypoechoic mass lesion was present in the subjective caudal abdomen potentially in the area of the iliac trifurcation, measuring approximately 3.4 cm in diameter. Regional associated reactive to potentially inflamed mesentery was present. Small pockets of scant concurrent peritoneal free fluid were present.

ULTRASONOGRAPHIC FINDINGS

Primary Findings

- Overtly normal cardiac structure and function with potential for mild LV pseudohypertrophy owing to decreased cardiac volume
- Bilateral chronic interstitial nephrosis renal pattern with mild left kidney pyelectasia - potential for nonspecific nephritis
- Unspecified mass lesion in subjective caudal abdomen potentially adjacent to the iliac trifurcation
- Mild to moderate volume pleural effusion with concurrent scant peritoneal free fluid

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The overall normal cardiac structure and function without evidence of overt systolic dysfunction or left or right heart chamber enlargement indicate that the pleural effusion in this patient is noncardiogenic in origin. No overt indication for cardiac medications.

Assuming normal clotting status, ultrasound guided FNA of the unspecified caudal abdominal mass using a 25-gauge needle is warranted for screening cytology and potential further clarification. Pleural effusion analysis, cytology, +/- C/S if evidence of inflammatory cells is recommended. If possible, therapeutic thoracocentesis may provide some relief to the patient with continued supportive care and oxygen therapy. Further renal staging to include urine C/S and protein: creatinine ratio on sterile urine sample may be considered. Assessment of systemic blood pressure if possible is suggested.

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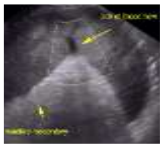
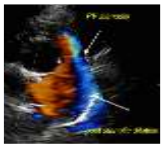
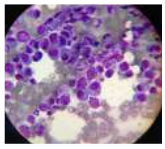
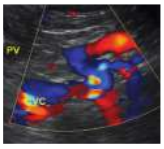

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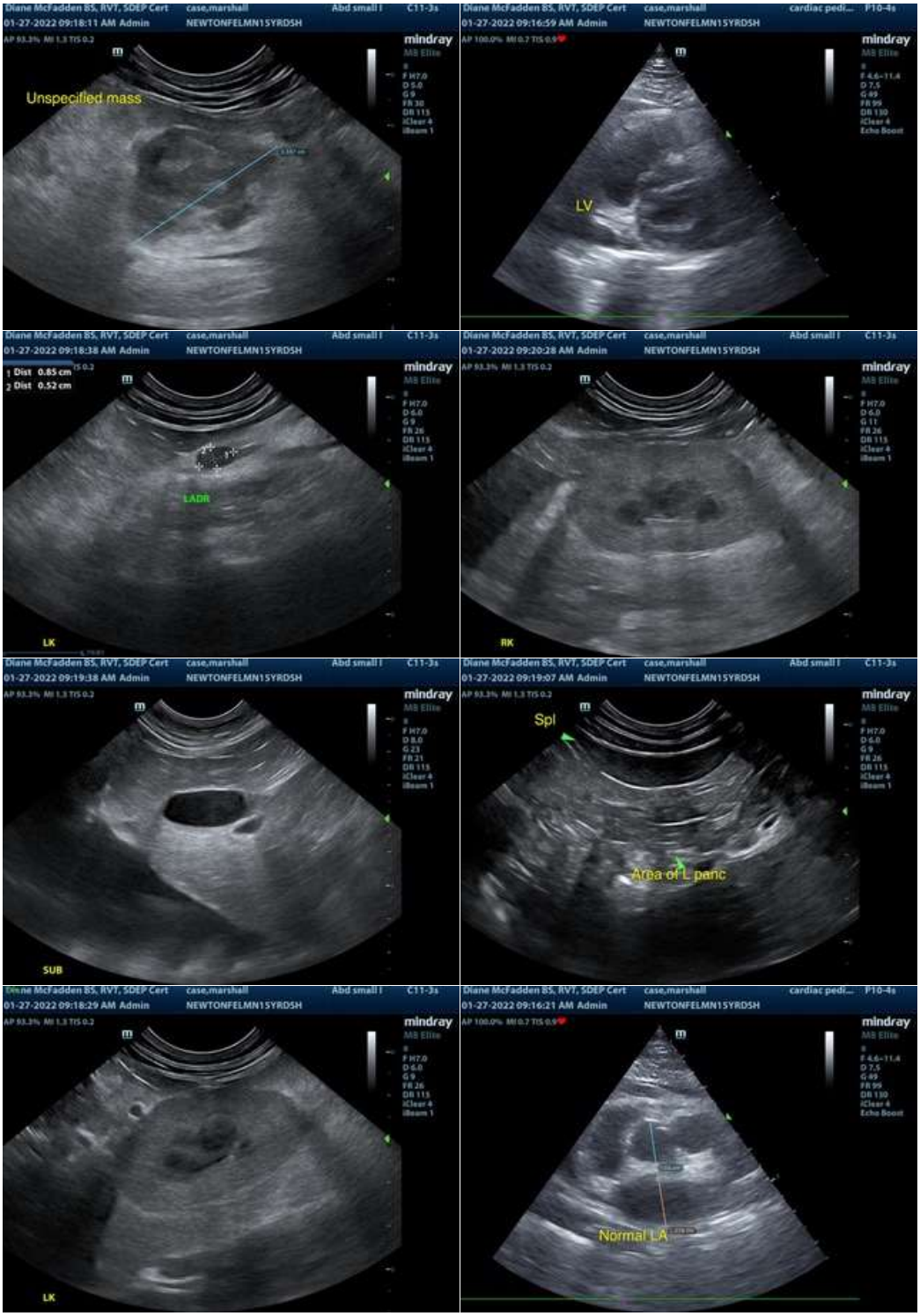

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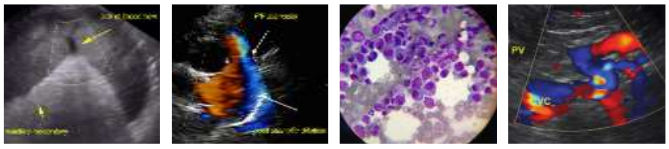

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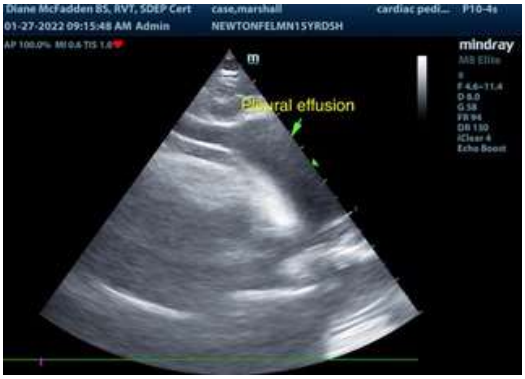

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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