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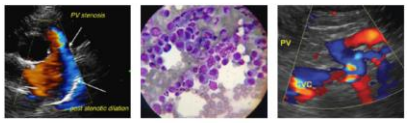


SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
1-800-838-4268 info@sonopath.com SonoPath.com

PATIENT

Sneaky Pete Medina

SPECIES

Feline

BREED

DSH

SEX

NM

AGE

16 years

WEIGHT

11 lbs.

INTERPRETED BY

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

IMAGING PERFORMED BY

Sarah Pender, CVT

HOSPITAL NAME

SVS Imaging QC

REFERRING VET

Dr Hartmann

INVOICE

15273

DATE

10/27/22

PRESENTING CLINICAL SIGNS

weight loss, inappropriate urination (on bed for 1 week). Did just move to new house. Bladder very large and hard at start of exam. Was expressed with good stream. Clear yellow urine. No coughing or respiratory issues.

Abnormal PE/Chem/CBC/UA Results: Elevated BUN, SDMA, Creatinine, ALT 146 WBC 18.16, HCT 27%, Urine: WBC 4/hpf, RBC 19/hpf, SpGr 1.015, pH 5.0 Fecal: toxocara cati

ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

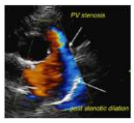
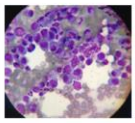
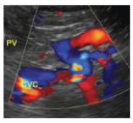
FELINE CARDIAC PARAMETERS	BODY WEIGHT (kg)	HR (BPM)	IVSd (cm)	LVIDd (cm)	LVWd (cm)	FS (%)	EF (%)
NORMAL PARAMETER	------	150-240	0.3-0.6	1.0-2.1	0.25-0.6	35-67	80-100
PATIENT		192	0.5	1.3	0.5	61	95

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	1.26	1.2		1.3	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 and structure. Chamber volume and blood echogenicity were normal without evidence of spontaneous contrast. The cranial and caudal **mitral** valve leaflets presented minor irregular age-related changes that are not clinically significant at this time with adequate extension in systole and union in diastole. Possible mild systolic anterior motion was noted. Mild eccentric MR was present. The **left ventricle** presented normal free wall and septal thicknesses with linear contour. The **myocardium** presented some echogenic remodeling consistent with expected age-related change. **Contractility** of the ventricular walls was adequate and in normal range for this breed and patient size. The **left ventricular outflow** tract demonstrated dynamic to turbulent systolic outflow with subjectively unremarkable structure. Subjective assessment of the **right atrium** and auricle revealed normal size, structure and content. No evidence of masses was noted. **Tricuspid** valvular assessment demonstrated expected findings for this

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age patient. The **right ventricle** was of normal size (1/3 diameter of LV), echogenicity and thickness. **Pulmonic** tract assessment revealed normal valve structure, laminar flow, and diameter (approx.1:1 pa/ao ratio). No visible **pericardial** free fluid was present. Mild to moderate volume free pleural fluid, which was primarily anechoic in appearance, was present. No overt evidence of cardiac tumors was noted. No obvious evidence of pericardial mediastinal or pulmonary masses in the visible window.

Urinary System

The urinary bladder was mildly distended in size with subjective normal tone containing anechoic urine with very minor particulate sediment, which may indicate minor cellular debris / protein, crystalline debris, mucus, or lipid. Focal areas of homogeneous dorsal and cystourethral junction wall thickening were noted. No evidence of wall mineralization were noted. An example of a focally thickened dorsal wall measured 2.3 cm x 0.99 cm. The proximal urethra exhibited overtly normal structure to a depth of 1.0 cm.

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. No evidence of pelvic dilation was present. Left kidney focal cortical infarct was noted. The left kidney measured 3.5 cm in length. The right kidney measured 3.7 cm in length.

Adrenal Glands

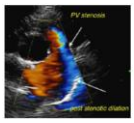
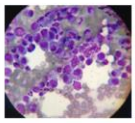
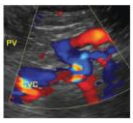
The left adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The left adrenal gland measured 0.48 cm width. The right adrenal gland was uniform in size and contour with a uniformly hypoechoic parenchyma. The right adrenal gland measured 0.42 cm width.

Spleen

The spleen exhibited primarily finely textured and homogenous parenchyma which was hyperechoic to the liver and renal cortical parenchyma. Multifocal, well-defined, symmetrical, nondisruptive, mildly hyperechoic nodules were present throughout the cranial to caudal parenchyma. An example measured 0.46 cm. 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 echogenic nodules tend to trend benign and are most consistent with benign hyperplasia or myelolipomas.

Liver/ Gallbladder

The liver revealed moderately sized to large irregular nonhomogeneous focally cystic mass occupying the subjective majority of the mid to right liver extending caudally past the level of the gastric axis. The mass measured ~8.0 cm in diameter. The gallbladder was non-distended in size with thin walls and primarily anechoic luminal content. The cystic and common bile ducts were normal.

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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 left limb, right limb, and base of the pancreas presented hypoechoic to heterogeneous echogenicity compared to adjacent omental fat. Mild asymmetrical capsule margination was present with mild variable parenchymal swelling and mild peripancreatic reactivity / inflammation. No overt evidence of neoplasia.

Free Abdomen

No overt evidence of concurrent peritoneal free fluid or overt lymphadenopathy was present. Mild perihepatic and peripancreatic hyperechoic mesentery was present.

ULTRASONOGRAPHIC FINDINGS

- Overtly normal cardiac structure and function with mild LV myocardial remodeling
- Mild MR with concurrent subjective turbulent to dynamic LVOT outflow - possible mild SAM
- Moderately sized to large nonhomogeneous focally cystic liver mass - strongly suggestive of neoplastic criteria
- Focally thickened dorsal urinary bladder and cystourethral junction wall - nonspecific, possible focal areas of cystitis, emerging neoplastic criteria i.e., TCC, cannot be excluded
- Benign splenic nodules - consistent with probable myelolipomas
- Mild chronic renal changes with left kidney infarct
- Prominent mildly nonhomogeneous to hypoechoic pancreas - age-related variant, potential for concurrent mild pancreatitis

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The lack of left atrium enlargement as well as additional clinical issues such as HCM criteria, LV systolic dysfunction, or evidence of clinical pulmonary hypertension indicates that pleural effusion is noncardiogenic in origin. No overt indication for cardiac medications.

Further assessment of the pleural effusion and liver mass may include FNA cytology, as well as effusion analysis cytospin cytology +/- C/S if evidence of inflammatory cells.

Given strong concern for primary hepatic neoplasia, potential thoracic metastasis is of concern given noncardiogenic pleural effusion. Spec fPL could be considered.

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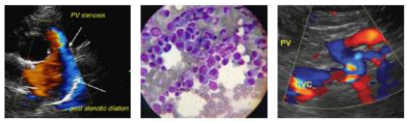

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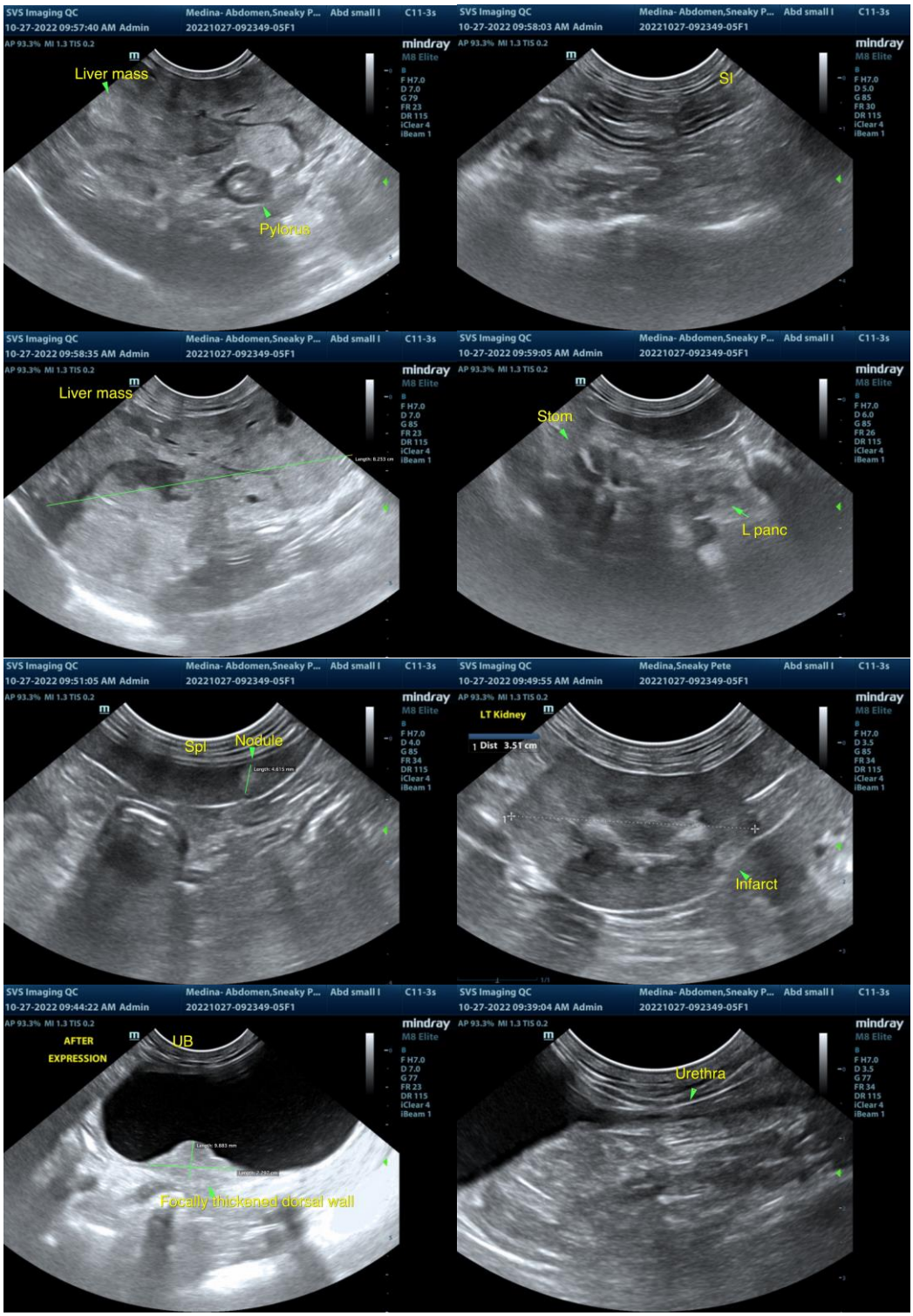

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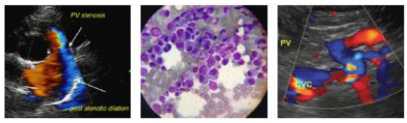

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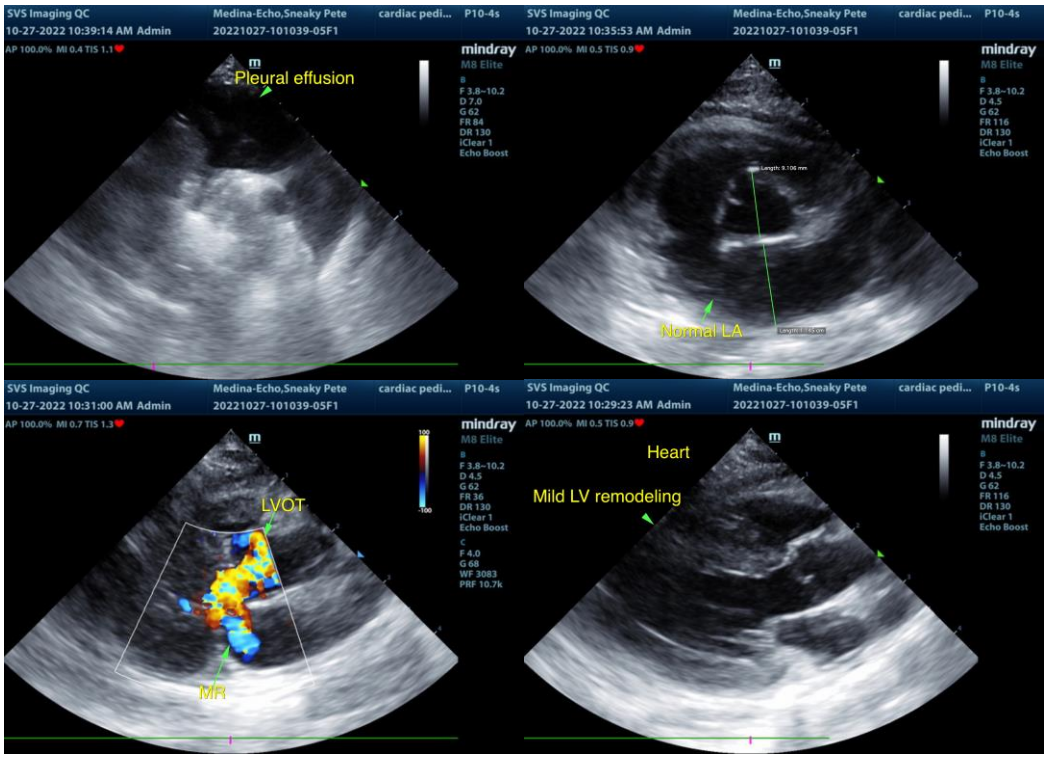

The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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