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Clinical Sonography & Telecytology
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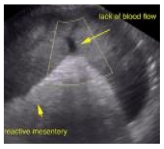
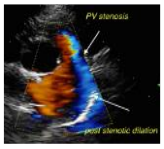
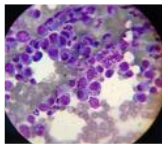
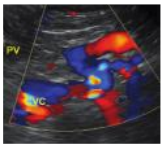





SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT

Frankie Androshick

SPECIES

Canine

BREED

Miniature Schnauzer

SEX

MN

AGE

11 yrs 11 mos

WEIGHT

31.2 lbs.

INTERPRETED BY

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

IMAGING PERFORMED BY

Kelly Vazquez

HOSPITAL NAME

Northvale Veterinary

REFERRING VET

Dr. Stefanie Simon

INVOICE

14866

DATE

9/14/22

PRESENTING CLINICAL SIGNS

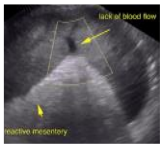
Patient presents for lymphadenopathy, decreased appetite, and diarrhea. Heart murmur, no clinical signs. Current meds: propectalin, probiotics, gent. eye drops (eye infection), convenia (abscess on back and mouth), Vit B 12.
Abnormal PE/Chem/CBC/UA Results: WBC 9.7, lymphopenia, thrombocytopenia, HCT 38.6 %, ALT 246, AST 67, ALP 2402, chol. 121.

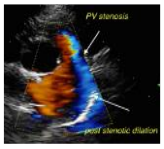
ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

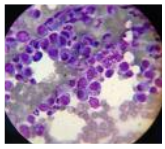
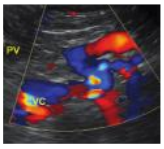
CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.3	28-40	40-100	<0.6
PATIENT	5.1			1.56	33.3	43.1	0.21
CANINE CARDIAC PARAMETERS	**HR** (BPM)	**AV VMAX** (m/s)	**PV MAX** (m/s)	**BODY WEIGHT** (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	88	2.0	1.4		4.3	3.5	

Cardiac Presentation

The echocardiogram in this patient demonstrated enlarged **left atrial** size based on 3 different LA measurement methods. Minor deviation of the interatrial septum towards the right atrium, suggestive of mild increased left atrial pressure, was present. The cranial and caudal **mitral** valve leaflets presented vegetative thickening consistent with endocardiosis. Doppler indicated measurable moderate eccentric insufficiency. 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. No evidence of cardiac tumors or overt cardiac neoplastic criteria was noted.





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Urinary System

The urinary bladder, trigone, cystourethral junction, and visible pelvic urethra to a depth of 3.0 cm exhibited normal thickness and tone. Primarily anechoic urine was present in the lumen with mild dependent mineral / sand. The ureteral papillae were normal. The ureters were not visible which is normal. No evidence of inflammatory or neoplastic changes was noted.

The residual prostate 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 mild loss of corticomedullary symmetry and definition expected for the age of the patient. No evidence of pelvic dilation was present. Pinpoint areas of medullary mineral were present. The left kidney measured 5.7 cm in length. The right kidney measured 5.4 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 1.9 cm length x 0.60 cm width at the caudal pole. No overt pathology was noted in the area of the left adrenal gland.

Spleen

The spleen exhibited normal size to possible borderline enlargement, maintained symmetrical capsule contour, and subjective reduced splenic parenchyma echogenicity compatible to the liver with parenchyma heterogeneity. Intermittent mildly hypoechoic splenic nodules were present with an example measuring 1.2 cm in diameter.

Liver/ Gallbladder

The liver exhibited generalized moderate to potential marked enlargement with symmetrical yet swollen hepatic contour and mildly reduced hepatic parenchyma echogenicity exhibiting moderate coarse echotexture. Intermittent discrete hepatic intraparenchymal nodules were present with an example measuring 1.2 cm in diameter. The gallbladder was non-distended in size containing mild, nondependent, mildly echogenic luminal debris. The cystic and common bile ducts were normal.

Gastrointestinal

The stomach presented intact yet mildly prominent wall layering secondary to echogenic mucosa hypertrophy. No evidence of gastric distension with retained ingesta, fluid, or foreign material.

The intestinal walls demonstrated intact wall layering and maintained 1:3 muscularis / mucosa ratio. The mucosa exhibited mild decreased echogenicity with occasional mucosal speckling. A minor segmental ileus pattern consisting of mild fluid accumulation in the intestinal lumen was present without obstruction or foreign material.

Normal visible colon wall layers were present with apparent formed feces in lumen.

Pancreas

The pancreas was normal in size and contour with isoechoic to heterogeneous parenchyma compared to adjacent omentum. No signs of active inflammation or neoplasia.

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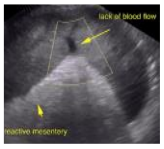

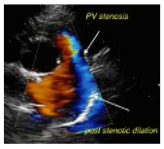

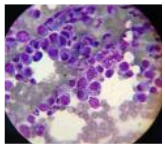
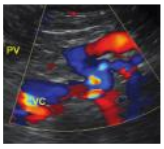

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Free Abdomen

Variably enlarged, hypoechoic to swollen medial iliac, mesenteric, and likely inguinal lymph nodes were present. The lymph nodes exhibited symmetrical to rounded margination with abnormal width: length ratio (>0.5). The enlarged lymph nodes were bordered by echogenic to reactive mesentery. An example of a mesenteric lymph node measured 4.3 cm x 4.0 cm width. An example of a medial iliac lymph node measured 3.6 cm x 2.0 cm. Mild volume peritoneal free fluid was noted.

ULTRASONOGRAPHIC FINDINGS

Primary Findings

- Chronic mitral valve disease (ACVIM mild B2)
- Multicentric hypoechoic to swollen intraabdominal and medial iliac lymphadenopathy
- hepatomegaly exhibiting intermittent intraparenchymal nodules
- Mildly hypoechoic spleen with intermittent hypoechoic nodules
- Perilymphatic to generalized hyperechoic mesentery and mild volume peritoneal free fluid
- Gastroenteritis pattern

Secondary Findings

- Bilateral mild chronic renal changes with minor medullary mineral
- Mild dependent urinary bladder mineral / sand

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

The mild left atrial enlargement indicates that the current and future risk going forward of complication secondary to mitral valve insufficiency is mildly elevated yet overall, the heart appears to be compensated at this stage. No other clinical issues such as LV systolic dysfunction or evidence of clinical pulmonary hypertension were noted.

Prognosis Is highly variable and serial sonographic monitoring is required for further assessment. Pimobendan 0.3 mg/kg PO BID is warranted even without current clinical signs, as this medication may help prolong cardiac changes associated with mitral valve insufficiency. Recheck echocardiogram is recommended in 6 months, sooner if clinical signs arise.

Although sampling is required for a further assessment, multicentric round cell neoplasia with primary concern for multicentric lymphoma involving multicentric intraabdominal and medial iliac lymph nodes and likely hepatosplenic involvement. Potential for very early gastrointestinal involvement cannot be definitively excluded given the patient's gastrointestinal signs.

Ultrasound-guided FNA of an enlarged lymph node as well as screening hepatosplenic FNA is warranted for further assessment and potential for oncology consult. A very guarded prognosis is warranted.

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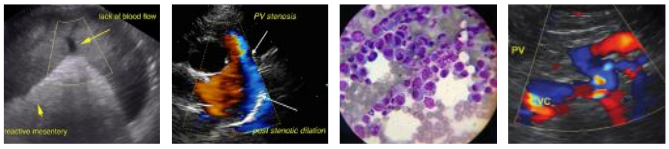

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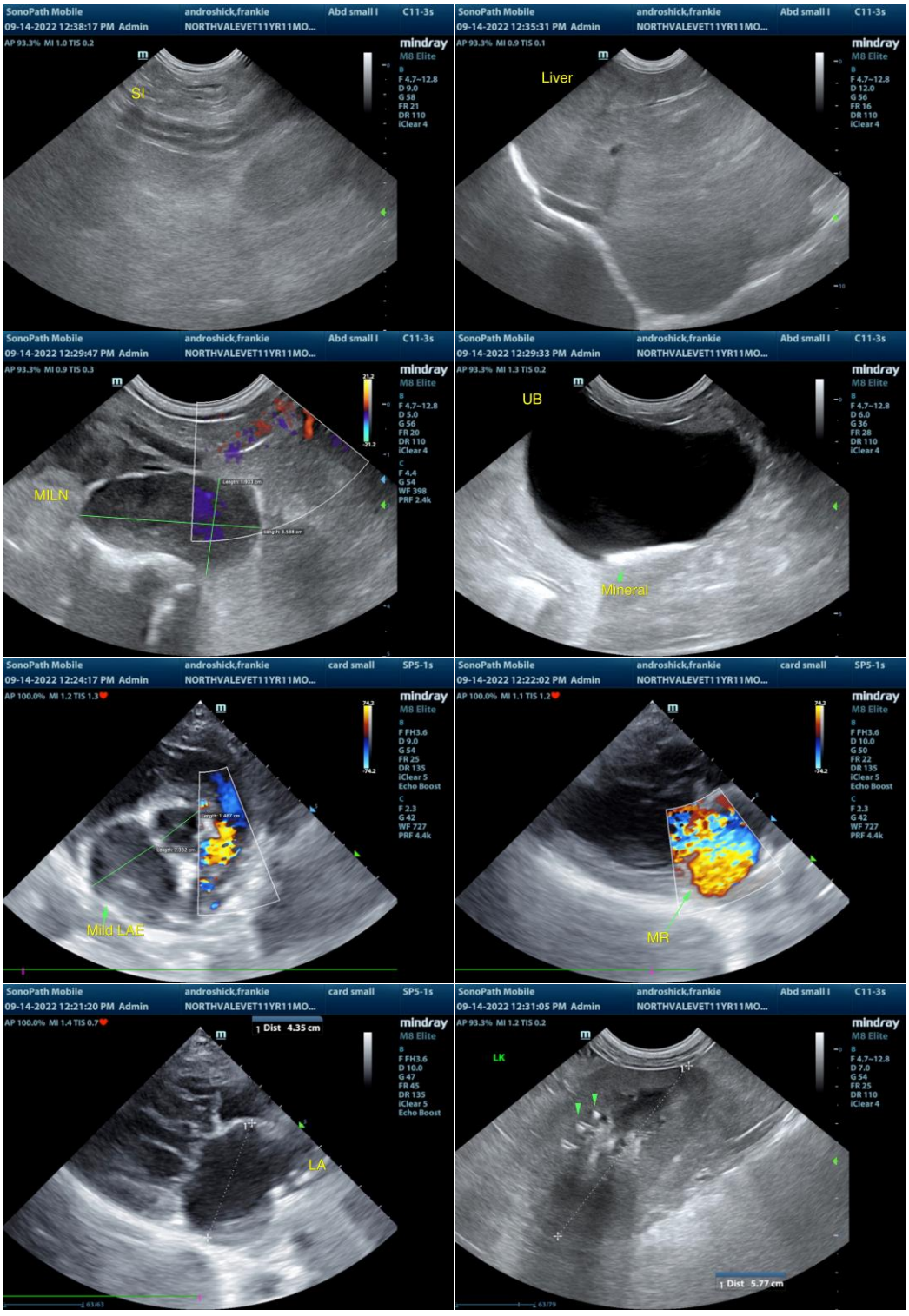

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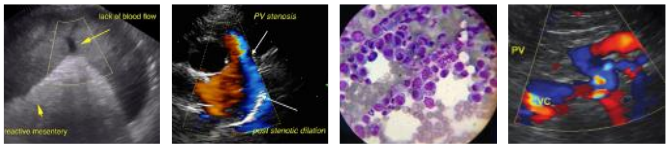

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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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