



PATIENT

Luna Withrow-Robinson

SPECIES

Canine

BREED

Border Collie Mix

SEX

Spayed Female

AGE

11 Years

WEIGHT

46 pounds

INTERPRETED BY

Bradley Harris, DVM, DACVECC, DACVIM (cardiology)

PRESENTING CLINICAL SIGNS

Clinical Exam Findings: Elevated pBNP, previously was drinking excessive water resolved. Now lethargy, some inappetence, at times very active and playful, at other times owner describes as "slipping away". BW was not highly remarkable to explain CS. Would like to know how bad heart is, rule in/out hemangio or other. ABNORMAL Labwork Values: ALB-2.6, GLOB-4.2, ALB/GLOB Ratio-0.6, AST- 63, RETIC- 159, MONO-1742, CARDIO BNP- 1652, USG - 1015 For ECHO Only: Blood Pressure: 140, 150, 150, 150 HR/RR/BP: 160 hr/Pant BP - 140, 150, 150, 150

ULTRASONOGRAPHIC EXAMINATION OF THE HEART & ABDOMEN

CANINE CARDIAC PARAMETERS	BW	HR BPM	LAD 4 ch Long	RAD 4 ch Long	La/Ao Heart Base	LVIDd	LVIDs
NORMAL PARAMETER		50-100			<1.6		
PATIENT	20.91	NM	3.89	2.35	1.15	3.55	2.37
CANINE CARDIAC PARAMETERS	FS	EPSS	PV V MAX (m/s)	AV V Max (m/sec)	MR Vmax	TR Vmax	RPA distensibility (normal >30%)
NORMAL PARAMETER	28-40	<0.6	0.7-1.6	0.7-1.7	4.5-5.5	< 2.7	
PATIENT	33	0.2	1.5	1.5	5.1	--	NM

IMAGING PERFORMED BY

Sara Hansen

HOSPITAL NAME

Albany Animal Hospital

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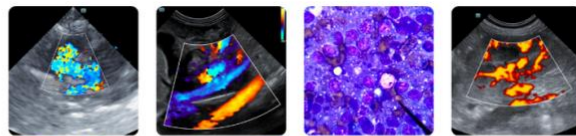
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Cardiac Presentation

The left atrium is normal in dimension. The left ventricle is normal in dimension with normal systolic function. The right atrium and ventricle are normal in dimension with normal systolic function. The endocardial surface of both the right and left atria, as well as the left ventricle and right ventricular outflow tract, display polyploid lesions that are pedunculated and protruding into the chamber lumen. There is no overt evidence of outflow/inflow obstruction or effect on systolic function identified. The anterior and posterior mitral valve leaflets are thickened and redundant consistent with myxomatous changes, and there is no significant prolapse. There is trivial mitral regurgitation identified. The tricuspid valve leaflets are appropriately thin with adequate apposition and intact chordae, with no significant tricuspid regurgitation and no evidence of pulmonary hypertension. The left ventricular outflow tract demonstrated normal laminar flow, and the visible aorta is unremarkable. The right ventricular outflow tract assessment revealed normal laminar flow, with appropriate main pulmonary artery diameter and right pulmonary artery distensibility. There is no pulmonic and no aortic valve insufficiency identified. There is no visible pericardial, pleural, or free peritoneal fluid documented. No evidence of hepatic venous congestion is noted. The cardiac chambers, pericardial, and visible extra-cardiac regions were free of masses, spontaneous echo contrast, or thrombi.

Urinary System



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The urinary bladder is adequately distended with anechoic urine. The bladder, trigone, and pelvic urethra are unremarkable with normal wall thicknesses and normal tone. The ureters were not visualized, which is a normal finding. There are no uroliths or sediment noted. The ureteral papillae appear normal. There is no evidence of inflammatory, infiltrative, or neoplastic disease.

Both kidneys are severely enlarged and diffusely affected by hypoechoic and heterogeneous mass effects. The right kidney is more significantly affected than the left, and there is no overtly normal discernible architecture identified in the right kidney. The left kidney displays a loss of corticomedullary distinction with circumscribed hypoechoic to partially cavitated mass effects within both the cortex and medulla. There's a minimal amount of identifiable normal medulla and pelvic architecture remaining. The left kidney measures 9.4 cm. The right kidney measures 10.58 cm.

Adrenal Glands

The left adrenal gland is visualized and have normal shape, size, position and echogenicity for this breed. The phrenic vasculature, glandular echogenicity and detail were unremarkable. Capsule, cortex, and medullary definition were normal for this age patient. The left adrenal gland measures 0.58 cm x 2.07 cm.

The right adrenal gland is enlarged and measures 1.2 cm x 2.86 cm. The right adrenal architecture appears normal with a swollen capsule and no overt evidence of capsular escape or vascular invasion.

Spleen

The spleen is smooth with homogeneous parenchyma and hyperechoic to liver and renal cortical parenchyma. The capsule is without noticeable irregularity or deformation. The splenic vasculature is normal without signs of congestion, spontaneous echo contrast, or thrombosis. No evidence of acute or chronic inflammatory, neoplastic, or infarct are documented. The spleen measures 1.8 cm at the hilus.

Liver

The liver displays a solitary hypoechoic to partially cavitated nodule at the cranial aspect of the right liver. The remainder of the parenchyma is normal in echogenicity with normal architecture. The vasculature is normal with no evidence of congestion.

The gallbladder has thin walls which contain anechoic bile. There is no evidence of intra- or extra-hepatic biliary dilation. The cystic and common bile ducts were normal. No hepatic lymphadenopathy is documented. There is no overt structural evidence of inflammatory, infiltrative or regenerative pathology evident.

Gastrointestinal

The stomach and intestines are free of stasis and peristaltic activity, with no significant dilation noted. There is normal wall thickness and acceptable curvilinear mural detail. The pyloric-duodenal junction and ileocecolic junction are patent, and the colon contains normal shadowing feces. There is no evidence of shadowing obstructive material or overt infiltrative disease noted. No associated abnormal lymphatic activity is documented.

Pancreas

The base and limbs of the pancreas are isoechoic to surrounding omental fat. The pancreatic duct and capsular contour are normal. There is no overt evidence of active inflammatory or neoplastic disease.



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Free Abdomen

There's a large mid-abdominal mass effect that is partially cavitated and mixed echogenic. There's no overt free peritoneal effusion in the region and the definitive origin is unclear, however, lymphatic is suspected.

ULTRASONOGRAPHIC FINDINGS

- These findings are consistent with degenerative/myxomatous mitral valve disease with minimal to mild hemodynamic effects consistent with ACVIM Stage B1 disease. It is unlikely that any current morbidity is of cardiac origin. The pedunculated lesions are of unknown significance at this time. The multifocal location in both the right and left heart make bacterial endocarditis considered less likely. There for myxoma/myosarcoma or other neoplastic lesion is more likely. At this time, the lesions are not affecting cardiac function or inflow/outflow, and are considered an incidental finding, however it is possible that they represent a metastatic lesion from the abdominal mass effects.
- The changes to the kidneys likely represent infiltrative neoplastic disease. Adenocarcinoma or hemangiosarcoma are considered most likely. Round cell neoplasia such as lymphoma should also be considered.
- The nodule within the right cranial liver is suspected to be potential metastatic disease. However, this may also represent a nonspecific incidental degenerative change.
- The mid-abdominal mass effect is of uncertain etiology. There's no evidence of free peritoneal effusion or rupture from the cavitated lesion. It's suspected to be lymphatic in origin and may either represent the primary tumor or an additional metastatic disease.

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Given these findings, no cardiac therapy is recommended at this time. There are no cardiac contraindications to anesthesia, fluid therapy, vasopressor therapy, or corticosteroids as indicated for further assessment and treatment. If not already performed, baseline thoracic radiographs and blood pressure are recommended. A recheck echocardiogram is recommended in 6 months.

Anesthesia considerations:

If anesthesia is necessary, alpha-2 agonists, ketamine, high dose acepromazine, and Telazol should be avoided. Fluid therapy during anesthesia should be considered at a conservative rate (e.g., 5 ml/kg/hour) if possible.

Diet:

A high-quality food from Hills, Royal Canin, Science Diet, Eukanuba, Iams, or Purina that is highly palatable with adequate protein and calories for maintaining optimal body condition is reasonable.

Activity:

No special considerations are necessary.

Fine needle aspirates of the mid-abdominal mass effect +/- the kidneys and liver with cytology are recommended. A coagulation profile and platelet estimate prior to sampling are indicated to ensure



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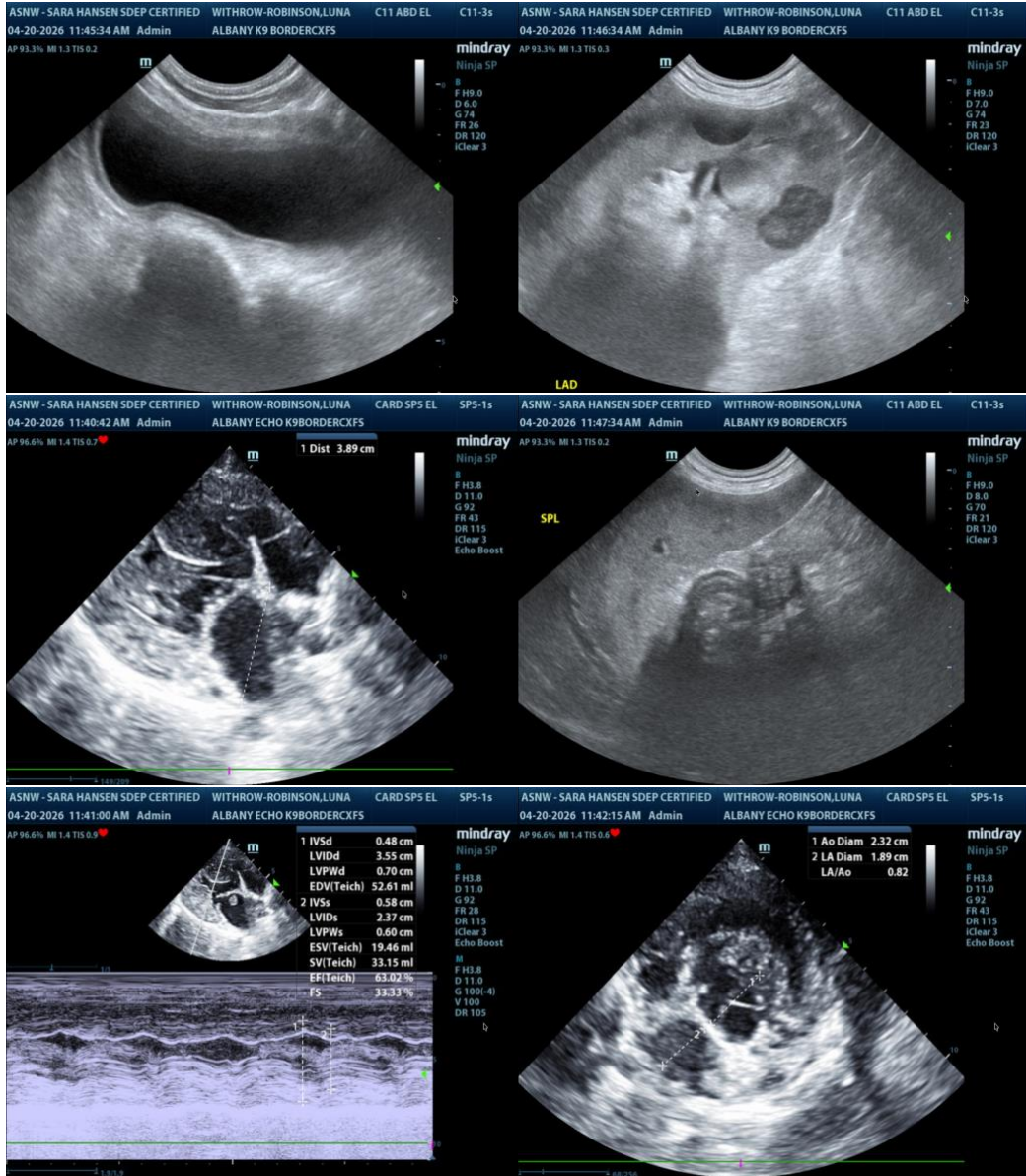
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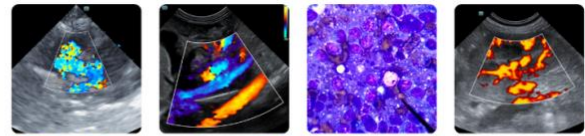
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the absence of coagulopathy. Occasionally some tissues are poorly exfoliative, or cytology is non-specific, in which case biopsy with histopathology may be required for a definitive diagnosis.





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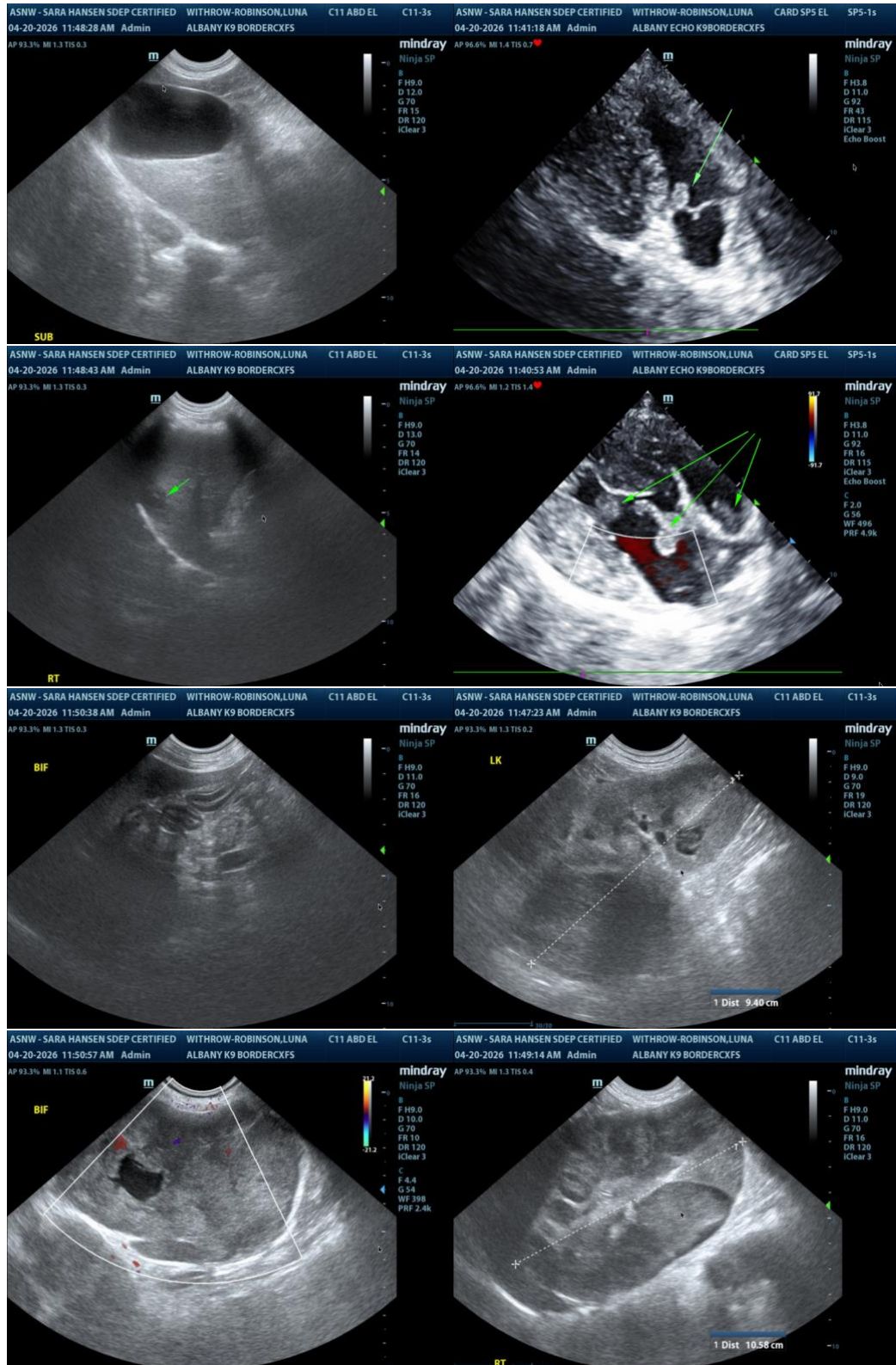
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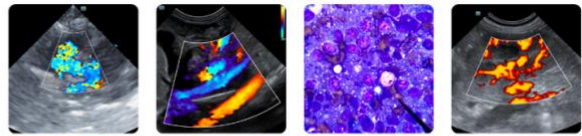
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The information and recommendations provided are based on the images presented by the referring veterinarian/sonographer. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Bradley Harris, DVM, DACVECC, DACVIM (cardiology)

info@SonoPath.com