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Clinical Sonography & Telecytology
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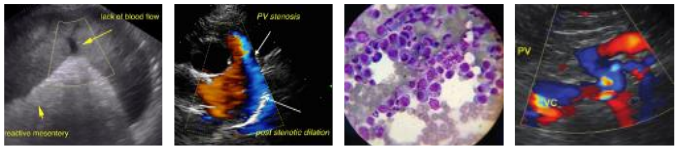

SonoPath.com
1-800-838-4268 info@sonopath.com

PATIENT
Titan Westmacott

SPECIES
Canine

BREED
French Bulldog

SEX
Male Neutered

AGE
11 years

WEIGHT
22.9lbs

INTERPRETED BY
Maggie Machen Lamy, DVM, DACVIM (Cardiology)

IMAGING PERFORMED BY
A. Westcott, DVM

HOSPITAL NAME
Alastair Westcott, DVM

REFERRING VET
Dr. Westcott

INVOICE
29585

DATE
3/14/23

PRESENTING CLINICAL SIGNS

History: Has been having episodes of weakness and unsteadiness. Coughing and occasionally vomiting. Otherwise has maintained a good appetite, is drinking normally and eliminating normally. Was diagnosed with cardiomegaly and a heart murmur a month ago. Has had longstanding serous nasal discharge
-Abnormal PE/Chem/CBC/UA Results: Slightly thin evidence of serous discharge from left nares. Grade IV/VI systolic murmur PMI left apex. Some fluid sounds upper pharyngeal region. Mild increase in lung sounds bilaterally.
-Radiographs: There is significant left-sided heart enlargement with a horizontal lysed trachea. There is no overt pulmonary edema. Mild to moderate parabronchial changes. There is an air-filled stomach likely from aerophagia. The left-sided cardiac enlargement is marked. There is a mildly dilated pulmonary artery suggesting a degree of pulmonary hypertension.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. The mitral valve is unable to be extensively visualized. NO obvious MR. Significant left atrial enlargement; however, standard views cannot be obtained due to mass infiltration. Large homogeneous hypoechoic mass suspected to be within the LA lumen; 3.7cm x 5.0cm in best-viewed cross section. The mass is impeding venous return to the left atrium. The LV is normal in dimension with adequate function. The tricuspid valve is mildly thickened with moderate TR. Velocity consistent with moderate pulmonary hypertension. The pulmonic and aortic valves are normal in morphology and mobility. Normal pulmonic and aortic outflow velocities with laminar flow. No obvious aortic and trace pulmonic insufficiency. No pericardial or pleural effusion noted.

CARDIAC CHART

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	<1.6	28-40	40-100	<0.6
PATIENT	NM	4.1	NM	>2.0	44	80	NM
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	BELOW	BELOW	BELOW	BELOW
PATIENT	NM	0.9	0.64	10.4	NM	2.5	1.4
*Normal chamber parameters expressed as a mean value (SD)				3	1.27 (5.3)	2.46 (2.46)	1.36 (5.5)
BODY WEIGHT DEPENDENT PARAMETERS				5	1.40 (4.5)	2.74 (5.2)	1.60 (4.7)
**Note: All measurements based upon multi-modal images and methods. An average value is reported.*				10	1.50 (3.8)	3.27 (3.5)	2.06 (3.1)
				15	1.83 (2.0)	3.71 (2.4)	2.43 (2.1)
				20	2.02 (1.9)	4.14 (2.2)	2.80 (2.0)
				25	2.18 (2.4)	4.48 (2.9)	3.10 (2.5)
				30	2.33 (3.3)	4.83 (3.9)	3.39 (3.4)
				35	2.48 (4.3)	5.17 (5.0)	3.69 (4.5)
				40	2.62 (5.2)	5.48 (6.1)	3.96 (5.4)
				50	2.88 (7.1)	6.07 (8.3)	4.46 (7.4)

Adapted from June Boon, Veterinary Echocardiography, 1998
Rishniw M and Hollis NE, J Vet Intern Med 2000; 14:429-435
Hansson et al, Vet Rad and Ultrasound 2002
Bonagura et al. Echocardiography: principles of interpretation, Vet Clin North Am 15:1177, 1995

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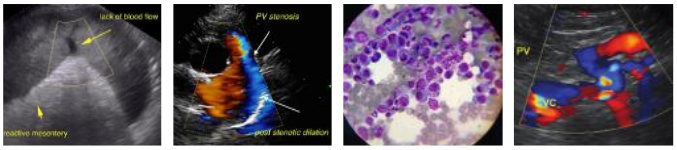

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Cardiac neoplasia is identified, with a large homogenous mass within the left atrium (see below). An origin cannot be visualized, such as the atrial wall. This is a highly unusual finding, making speculation on tumor type difficult. Rule outs include myxoma, hemangiosarcoma, fibroelastoma, metastatic lesion, etc. Moderate TR with elevated pulmonary pressures are suspected to be secondary to the tumor impeding venous return. The right heart is not significant enlarged at this time; however, this may develop in the future.ds No obvious additional issues are identified.

Going forward, there are options for further evaluation and potentially palliative care. The location is clearly a limiting factor independent of tumor type, as removal is not possible without cardiac bypass. Full systemic work up is the recommended as a next step, in search of ancillary lesions that may be amenable to sampling in search of a definitive diagnosis. If able to be obtained, chemotherapy and other treatment options could be discussed with an Oncologist.

Given these findings, treatment is purely speculative. The clinical signs that are reported are certainly secondary to the mass and quality of life is of the up most importance in deciding course of action. Consider use of Pimobendan, Spironolactone and an ACE-I in hopes of prolonging asymptomatic life, improving cardiac output and slight volume reduction. Sildenafil is not clearly indicated as true pulmonary hypertension is not present. If quality of life suffers, euthanasia should be elected in this case.

Omega fatty acid supplementation may be of some long term benefit for both arrhythmias and valve disease. Monitor for development of a cough, labored breathing, exercise intolerance or collapse episodes in the future. Unfortunately the prognosis is poor with potential for syncope, collapse and/or sudden death going forward. An embolic event is also possible given the location/size of the lesion.

Lifelong activity restriction is advised.

PLAN

Consider referral for advanced diagnostics/treatment discussion at a multi-specialty center (ideally a Cardiologist and Oncologist would be available). If declined, consider full systemic evaluation as discussed. Institute Pimobendan 0.25-0.3mg/kg PO q12h. Institute ACE-I 0.5mg/kg PO q12h (pending BP >130mmHg). Institute Spironolactone 1-2mg/kg PO q12h. Baseline BP/ECG recommended.

If QOL suffers, euthanasia should be elected.

Recheck echocardiogram is recommended in 2-3 months to reassess lesion, sooner if symptoms arise.

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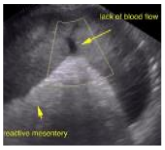
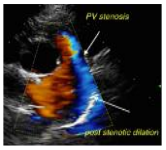
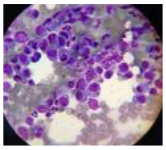
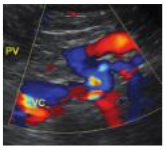

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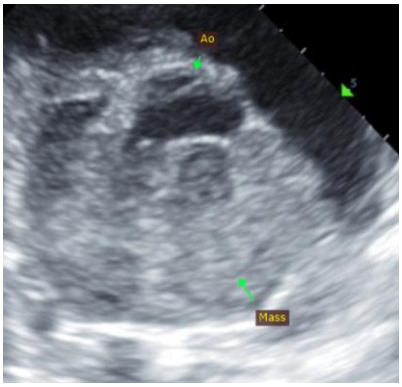
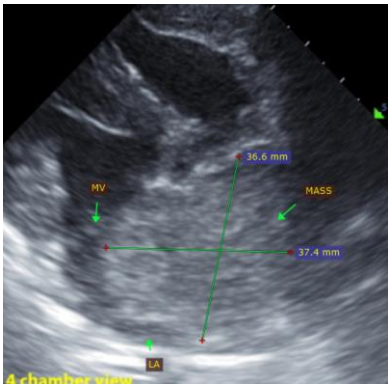
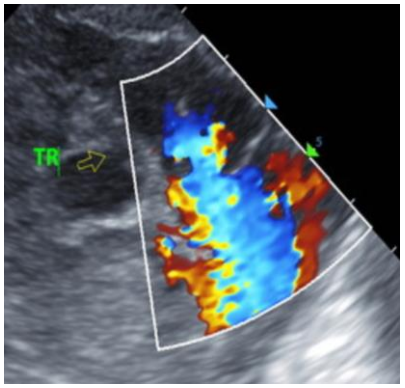
IMAGES







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

Thank you for this referral. This report was generated using transcription software, and minor dictation errors may be present. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance, please contact me.

Maggie Machen Lamy, DVM
Diplomate of the American College of Veterinary Internal Medicine (Cardiology)
info@sonopath.com