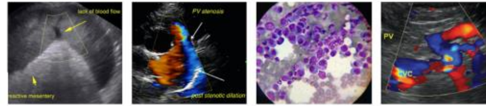
Mass Veterinary Specialty Services
1-413-734-1292



SonoPath
Clinical Sonography & Telecytology
EDUCATIONAL TELECONSULTATION SERVICES™
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PATIENT
Candy Bakes

SPECIES
Canine

BREED
Cockapoo

SEX
Female Spayed

AGE
12 years

WEIGHT
14.4lbs

INTERPRETED BY
Maggie Machen Lamy, DVM DACVIM (Cardiology)

IMAGING PERFORMED BY
Pamela Harrigan, RDCS

HOSPITAL NAME
Mass Veterinary Specialty Services

REFERRING VET
Dr. Masloski

INVOICE
21025

DATE
9/14/21

PRESENTING CLINICAL SIGNS

History: Candy is referred to evaluate a cough which has been going on for over a month. Chest radiographs revealed cardiomegaly. Two months ago, she was started on an antibiotic for her cough which did not help. Presently, her cough is random throughout the day; she seems to be more lethargic. On exam today, her abdomen appears distended. CV/RESP: NSR, no murmurs noted, PSS, lung fields clear. BP: 130mmHg. No medications. 300ml removed from abdomen. *No sedation.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and Doppler imaging is available.
Left ventricle: The LV diameter is normal with adequate myocardial function. LV wall thicknesses are normal.
Left atrium: The left atrium is mildly dilated.
Mitral valve: The mitral valve is mildly thickened with no prolapse into the left atrial lumen. Mild mitral regurgitation with a normal velocity.
Aortic valve/aorta: The aortic valve is normal in morphology and mobility. Normal aortic outflow velocity; laminar flow. No aortic insufficiency. A large mixed echogenicity lesion is seen associated with the heart-base (at least 5.2 x 5.5cm in diameter). Possible extension into the RA is identified (see below). The mass appears intrapericardial although extension is not ruled out.
Right ventricle: RV appears mildly dilated.
Right atrium: Mild RA dilation. Hyperechoic process noted; appears affiliated with the tumor. No obvious tamponade.
Tricuspid valve: The tricuspid valve appears mildly thickened with trace tricuspid regurgitation. Normal velocity.
Pulmonic valve/pulmonary artery: The pulmonic valve is normal in morphology and mobility. No pulmonic insufficiency. Normal RVOT velocity; laminar flow.
Pericardium/other: Small volume pericardial effusion. No pleural effusion noted. Large volume ascites.
Heart rhythm: ECG reveals a sinus rhythm with an average HR of 150bpm.

2-Dimensional Measurements

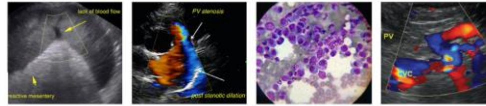
Measurement	Value
Ao diam (cm)	1.3
LA diam (cm)	1.9
LA:Ao (Swe)	1.4
IVS thickness (cm)	0.65
LVID diastole (cm)	2.3
PW thickness (cm)	0.65
LVID systole (cm)	1.3
FS (%)	43

Doppler Measurements

Measurement	Value
PV Vmax (m/s)	1.5
AoV Vmax (m/s)	1.5
MR Vmax (m/s)	6.0
TR Vmax (m/s)	2.5
TR PG (mmHg)	25

INTERPRETATION OF THE FINDINGS

Primary cardiac neoplasia is identified leading to right-sided congestive heart failure (ascites) and pericardial effusion. The mass is extremely large and is likely compressing the distal pulmonary vasculature, although this is not definitively seen. An alternative possibility would be an acute tumor bleed causing hemorrhagic pericardial effusion and resultant tamponade/ascites has developed; however, this is not suspected based upon the RA appearance. There is also a projection within the right atrium (which is presumably



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infiltrative, although a separate lesion is possible). Mild MR and mild left-sided disease is also noted which is hemodynamically insignificant in comparison.

Given the size of the mass, signalment and location, the diagnosis is likely a chemodectoma; however, a less common tumor such as ectopic parathyroid, lymphoma, etc. cannot be entirely ruled out without a biopsy. The issue is more of a mechanical obstruction than true pulmonary hypertension, and sildenafil will be of little benefit. The best we can do is relieve the pressure within the abdomen through tapping when needed and use of medications for congestive heart failure to help slow fluid accumulation. Torsemide would be a good option in this case due to a superior GI absorption, this is in addition to Pimobendan for theoretic benefit. If the effusions/clinical status do not improve with aggressive diuretic therapy, consider the alternative option of a pericardial bleed as well. A pericardiocentesis for both diagnostic and therapeutic purposes may become indicated in this instance. A bleed can happen at any time, further complicating the situation.

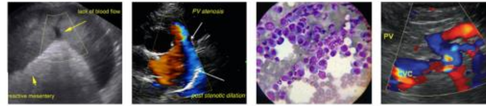
Renal values should be checked in 5-7 days, then every 2-3 months while on this protocol. I am cautiously optimistic that we can decrease fluid volume by some degree for the short term; however, the size of the mass and infiltrative nature confers a grave prognosis at this juncture. Diuretics are a band aid over a much bigger issue as the tumor continues to grow. As a last effort, steroids can be attempted for their anti-neoplastic benefit, however I would attempt alternative diuretic therapy first. If QOL suffers at any point in the future, euthanasia should be considered.

Going forward there are some options for palliating this type of cancer, including radiation and chemotherapy. Consultation with an Oncologist is recommended if elected.

Unfortunately, this is an end-stage condition at this juncture. High risk will always remain for recurrent effusions (pericardial, pleural or abdominal) and development of arrhythmias/sudden death at home. Monitor at home for progressive abdominal distention, labored breathing and/or lethargy and collapse.

RECOMMENDATIONS

- Consider Torsemide 1.25mg PO q24h (5 and 10mg tabs available in human pharmacies).
- Institute Spironolactone 1-2mg/kg PO q12h.
- Institute Pimobendan 0.3mg/kg PO q12h.
- Institute ACEI 0.5mg/kg PO q24h.
- Periodic abdominocentesis as needed when patient becomes inappetant, dyspneic or uncomfortable.
- If effusion/clinical signs do not improve on torsemide, consider a diagnostic/therapeutic pericardiocentesis.
- Consider referral for advanced diagnostics (CT/MRI) as discussed.
- Consider consultation with an Oncologist.
- Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit.
- Anesthesia is not advised.
- Monitor for development of associated clinical signs (collapse, abdominal distention, cough, labored breathing).



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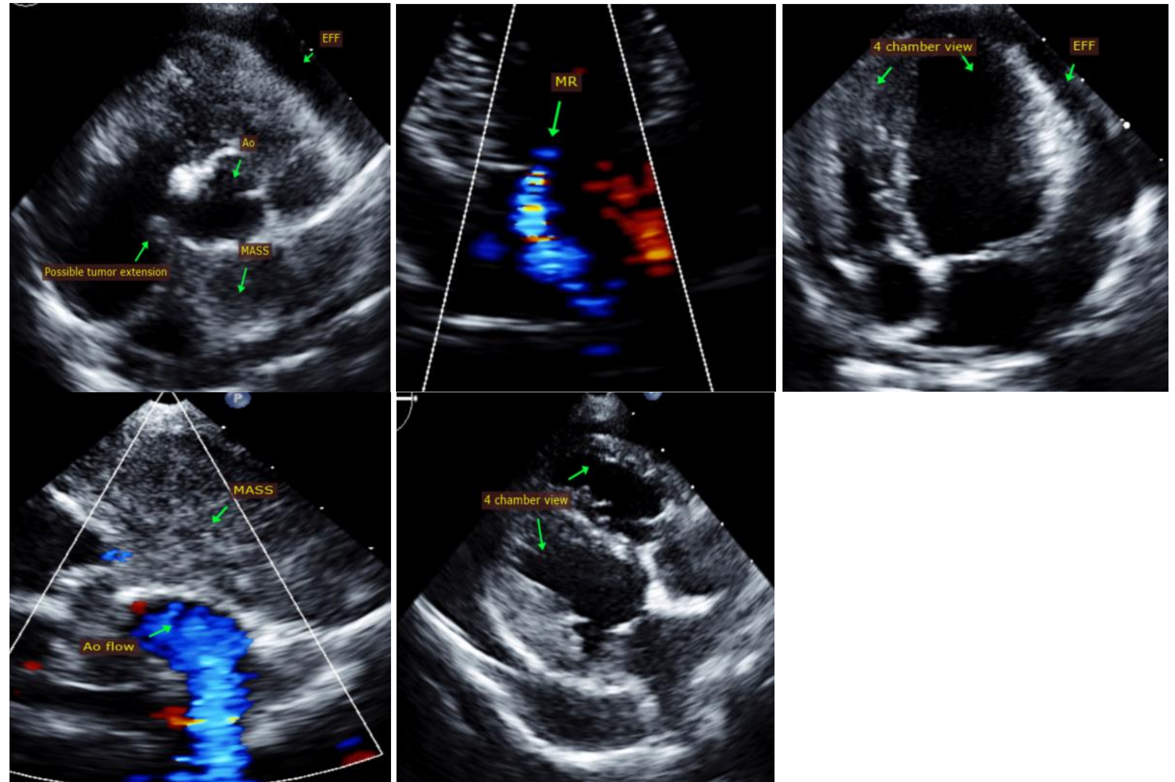
- Moderate exercise restriction is advised.

PLAN

Recheck renal values in 5-7 days to ensure tolerance of medications, sooner if any decline in appetite or energy level. Once stable, recheck labs every 3-4 months.
Recommend conservative monitoring with a recheck echocardiogram in 6 months, sooner if any development of clinical signs.
If quality of life suffers at any point, humane euthanasia should be elected.

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

Echocardiogram performed by: Pamela Harrigan, RDCS
Pet Animal Ultrasound Service (4paus.com