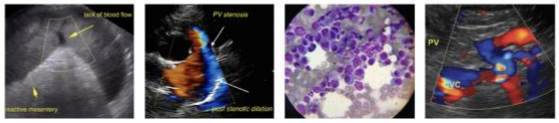

PATIENT

Enzo Hudson

SPECIES

Canine

BREED

Yorkie

SEX

Neutered Male

AGE

4 Years

WEIGHT

6.4 kg

INTERPRETED BY

Eric Lindquist, DMV DABVP, Cert. IVUSS

IMAGING PERFORMED BY

Andrea Nicastro, DVM, Diplomate ACVIM (*Small Animal Internal*

HOSPITAL NAME

Veteriinary Specialty

REFERRING VET

Dr. Shannon Graham

INVOICE

16559

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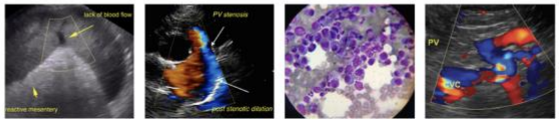
7/26/22

PRESENTING CLINICAL SIGNS

History: Enzo is a 4Y IM Yorkie presenting for labored breathing and vomiting. O says she left this morning, P was fine, ate and drank as normal, normal bowel movements. O says she got home around 630PM this evening and found several piles of vomit. O says the vomitus consisted of undigested food. O says that P was laying down, looked lethargic and was having labored breathing. O says that there is no known FB ingestion, no toxins in the home P could have gotten into, but P was at a friends house over the weekend that does have sago palms. UTD on vaccines and preventions, no current medications. Medical hx: -Torn ACL and luxating patella's, P has not had surgery yet, O says rDVM recommended P lose weight prior. -P saw VMC in 2020 for PU/PD, diagnostics preformed were WNL. PE: Mentation: Quiet, lethargic, and responsive. Hydration: 5% dehydrated Eyes, Ears, Nose: No ocular discharge OU; no nasal discharge and airflow present bilaterally; mild debris AU; no significant abnormalities noted Oral Cavity: Grade 2/4 periodontal disease; mucous membranes are pink, tacky; CRT 2 sec; no evidence of petechiation or ulceration; no foreign object or mass appreciated Cardiovascular: Difficult to hear heart due to respiratory noise & harsh BV sounds, no murmur or arrhythmia noted, pulses were strong and synchronous. Respiratory: Moderate tachypnea and mild dyspnea/abdominal effort, mildly harsh/increased bronchovesicular sounds on all lung fields, no cough elicited on tracheal palpation Neurologic: PLR (direct & consensual) positive OU, no pain elicited on manipulation and palpation of neck and spine; no obvious neurologic deficits noted (complete neurologic exam not performed). Gastrointestinal/Urogenital: Tense and mildly painful abdomen with no evidence of mass or organomegaly on palpation Rectal: Normal stool color and consistency with no mass or foreign material evident; anal glands soft and small, not expressed Peripheral Lymph Nodes: Small, soft, smooth, and symmetrical Integument: Hair coat in good condition for age and breed, no ectoparasites or dermatitis noted, mild dorsal scale Musculoskeletal: BCS 6/9, adequate musculature, no evidence of weakness or lameness during ambulation; Grade 3 left MPL. Grade 2 right MPL. Right stifle moderate tibial thrust. Left stifle stable. No murmur ausculted Meds: 7/25: O2 cage @ 40-50% Phylyte 24 ml/hr IV (1.5x maint) Cerenia 6.5 mg IV 24h Ampicillin/sulbactam 195 mg IV q8h Protonix 6.5 mg IV q12h Torb 1.2 mg IV PRN for sedation; has also received a total of 8mg/kg Lasix since 9am today Rads: 7/25 7 PM Three View Thoracic & Abdominal Radiographs with Stat Keystone: Findings: 3 views of the thorax made 7/25/22. There is a ventrally distributed alveolar pattern in the left cranial and caudal lung lobes. There is a subtle interstitial pattern throughout the remainder of the lung. Pulmonary lobar vessels are normal and equal in size. The cardiac silhouette is mildly enlarged with a widened/rounded appearance on all views. No pleural effusion is seen. No enlarged thoracic lymph nodes are evident. The trachea is slightly variable in diameter being mildly widened on the right lateral view and mildly narrowed on the left lateral view. The stomach is mildly gas dilated. The small intestine contains gas and fluid and is normal and uniform in diameter with a turgid appearance. There is soft tissue opaque feces in the colon. The liver, spleen, kidneys, and urinary bladder are normal. Peritoneal serosal detail is questionably decreased. RADIOGRAPHIC DIAGNOSIS: Extensive left-sided bronchopneumonia, likely due to aspiration. Mild cardiomegaly without evidence of heart failure. Chronic mitral valve disease is most likely. Tracheal chondromalacia. Suspect gastroenteritis, pancreatitis could also be considered. GI obstruction is not identified Equivocal decreased peritoneal serosal detail. This may be overestimated or may indicate mesenteric inflammation or small volume effusion related to #4 above. Recommend treatment for pneumonia and serial radiographic monitoring. Consider abdominal ultrasound especially if vomiting is persistent despite medical management of the GI signs. R. Simpler, VMD, DACVR 7/26 9 AM Diagnostics: Findings: Six images of the thorax and abdomen are available for review. Three images are dated 7-25-22. Three images are dated 7-26-22. 7-25-22. Thorax: Subjectively, the cardiac silhouette is normal in



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size and shape for the patient's breed with no specific chamber enlargement. The vertebral heart score is 11.6 which is enlarged. The pulmonary vasculature is within normal limits. There is an alveolar pulmonary pattern within the left cranial lung lobe with air bronchograms, partial border effacement of the cardiac silhouette, and a lobar sign. There is also likely an alveolar pulmonary pattern within the ventral aspect of the left caudal lung lobe that is poorly defined on the lateral projection. No gas or free fluid is seen within the pleural space. No esophageal dilation is seen. The viewable trachea is normal. There is a band of soft tissue opacity at the dorsal aspect of the trachea as with an overlying esophagus or trachealis invagination which is usually incidental. No masses are seen within the mediastinum. The thoracic spine is well aligned. No rib lesions are seen. Abdomen: The liver and spleen are normal in size and shape. The viewable kidneys and urinary bladder are normal in size and shape. The stomach is normal in size and position and contains gas. No obstructive foreign material is seen within the pylorus. The small intestines are within normal size limits and well dispersed throughout the abdomen. The colon contains feces. There is good peritoneal serosal detail. The lumbar spine is well aligned. There are mild degenerative changes at the viewable stifles. There are mild degenerative changes at the coxofemoral joints bilaterally. 7-26-22. Thorax: The vertebral heart score is now 12.4. There is now mild left atrial enlargement.. The pulmonary vasculature is still within normal limits. There is now a diffuse unstructured interstitial pulmonary pattern that is more severe caudal dorsally. The previously seen cranioventral alveolar pulmonary pattern within the left cranial lung lobe is unchanged. There is now an alveolar pulmonary pattern within the right middle lung lobe. There is new small volume of pleural effusion. The liver is now mildly enlarged. Assessment: New diffuse and caudal dorsal pulmonary infiltrates as with cardiogenic pulmonary edema given the patient's history and new cardiomegaly between exams. Volume overload with underlying cardiac disease as with mitral valve insufficiency is considered. Concurrent tricuspid valve insufficiency is also considered given the scant pleural effusion and hepatomegaly (as with congestion). The persistent alveolar pulmonary pattern within the left cranial lung lobe is most consistent with aspiration pneumonia. Emerging aspiration pneumonia within the right middle lung lobe is also possible. Airway sampling can be considered to guide therapy when the patient is stable. Unremarkable abdomen. Mild stifle osteoarthrosis. Mild coxofemoral joint osteoarthrosis. Patellar luxation is possible.

Abnormal PE/Chem/CBC/UA Results: 7/25 6 PM PCV/TS: 48% / 7.8 g/dL , BG 102 mg/dL , Lact 3.7 mmol/L Complete Blood Count: Lymph 7.42 K/uL, Mono 1.22 K/uL Chem 17: No significant abnormalities 7/26 4 AM PCV/TS: 46%/6.0 g/dL, BG: 88 mg/dL, Lact 0.7 mmol/L No BP

ULTRASONOGRAPHIC EXAMINATION OF THE HEART

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	--	--	1.1	--	30	--	0.3

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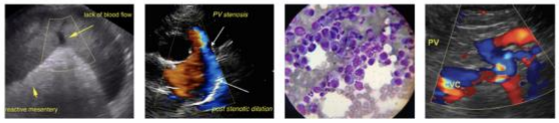

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CANINE CARDIAC PARAMETERS	**HR** (BPM)	**AV VMAX** (m/s)	**PV MAX** (m/s)	**BODY WEIGHT** (kg)	**LA** 2D short axis Base view (cm)	**LVIDd** Avg; 2D and m-mode short axis (cm)	**LVIDs** Avg; 2D and m-mode short axis (cm)
NORMAL PARAMETER	50-100	0.7-1.7	0.7-1.6				
PATIENT	--	1.00	.50	--	2.1	2.5	--

Cardiac Presentation

The echocardiogram in this patient demonstrated normal **left atrial** size based on 3 separate methods of LA evaluation. The cranial and caudal **mitral** valve leaflets presented normal linear structure, extension in systole, and union in diastole with normal kinesis. 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. Trivial tricuspid insufficiency was noted. The **right ventricle** was of normal size (1/3 diameter of LV), chordae structure, myocardial echogenicity and thickness. **Pulmonary outflow** 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. The cranial **mediastinum and pericardial and extra-cardiac regions** were free of masses in the visible window. Bradycardia appeared to be present.

ULTRASONOGRAPHIC FINDINGS

- Noncardiogenic pulmonary consolidation
- Normal echocardiogram

INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

No cardiac influence upon the clinical status in this patient. The acoustic window was poor, owing to lung artifact, however, volumes were absolutely normal. Given the patient history, I'm strongly concerned for pulmonary thromboembolism. Pneumonitis/pneumonia are possible, yet given the sudden onset, PTE or lung lobe torsion (less likely) should be considered as primary concerns. No evidence of pulmonary hypertension noted at this time. Hepatic veins were not dilated.

I recommend chest CT for further definition and/or lung FNA (if accessible) from a sonographic standpoint. However, no acoustic window was evident at the time of the sonogram. Chest CT is highly recommended as the next diagnostic step.

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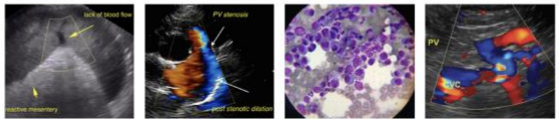

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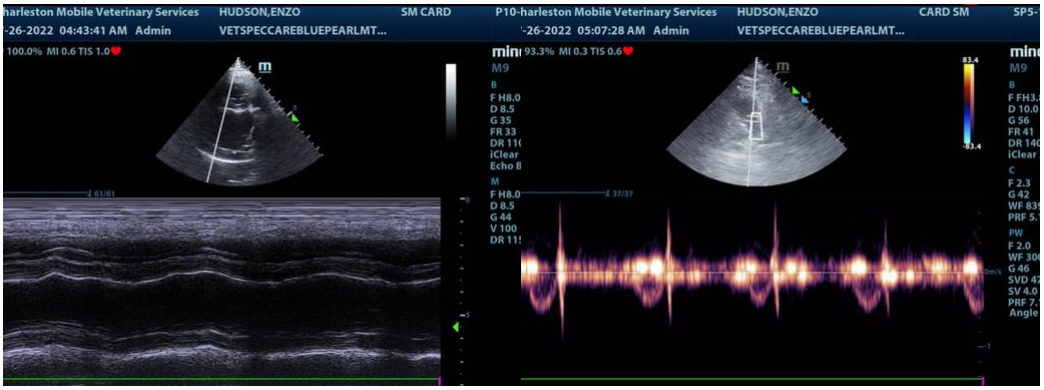

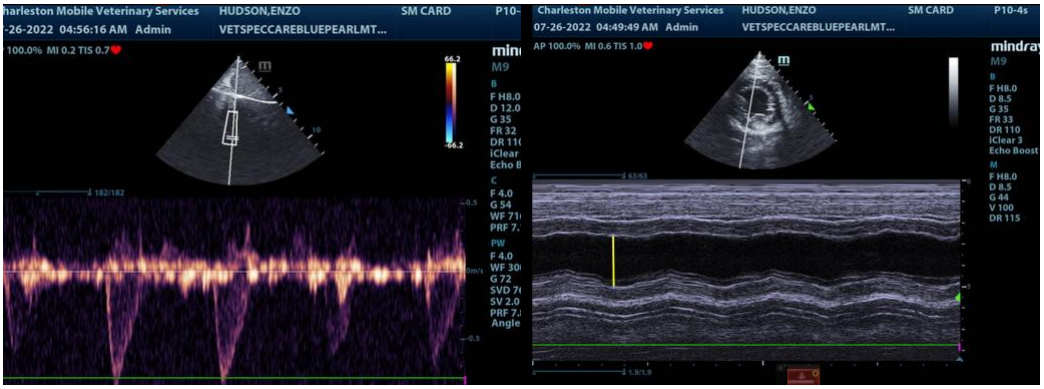

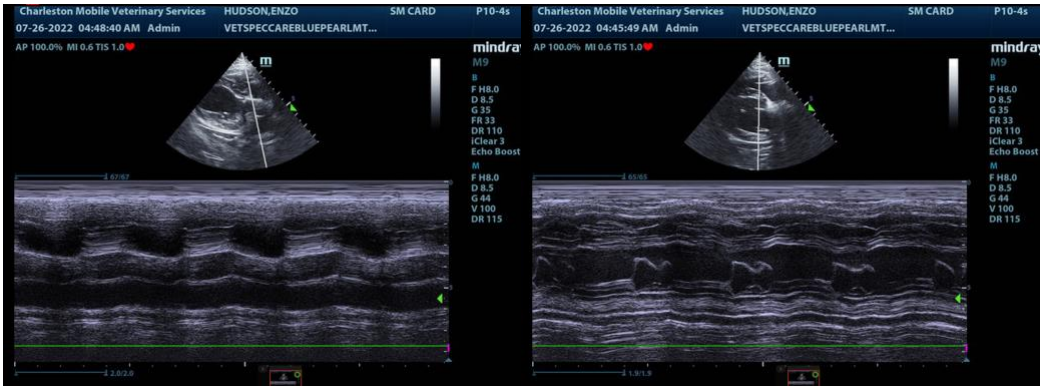

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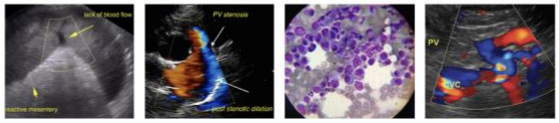

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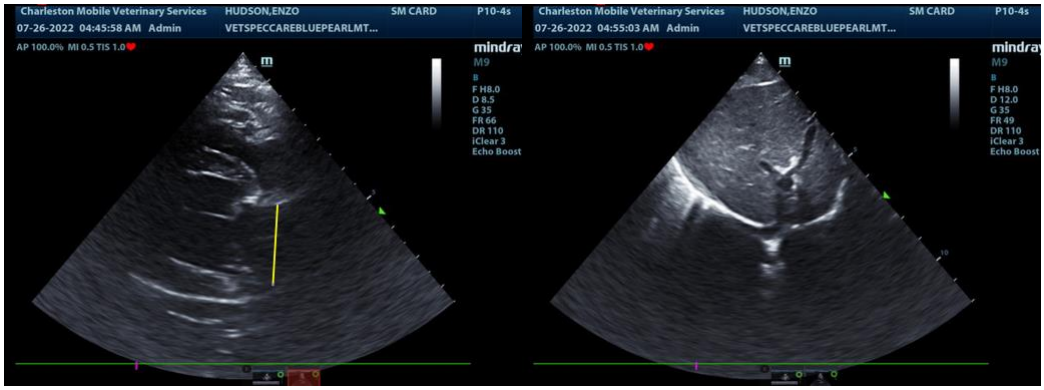

The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

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.

Eric Lindquist, DMV, DABVP, Cert. IVUSS, CEO of SonoPath.com

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