



Cardiology

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Chief Complaint

“Skye” is a 12 year old spayed female Golden Retriever who suddenly collapsed this morning. She has labored breathing and has not eaten for the past 2 days

Skye



History

- Decreased exercise tolerance
- DA2PVP, Rabies and Bordetella up to date
- Respiratory distress
- Rapid respiration
- Very weak the last 2 days

Physical Examination

- Lethargic and weak
- Temperature 37 degrees C
- Heart Rate 150 but difficult to hear – heart sounds are muffled.
- Respiratory rate – 40 per minute
- Weak arterial pulses
- Pale mucous membranes
- Capillary Refill Time (CRT) - > 3 seconds
- Abdominal Distension (Ascites)– palpate a fluid wave

What are the two general causes of a Distended Abdomen?

- Distended Abdomen? Two General Causes

Causes of Distended Abdomen

- Enlarged Organ
- Fluid around the organs
 - Water
 - Blood

Rule outs of Abdominal Distension Due to Ascites (increased fluid)

- What are possible rule outs or causes of abdominal distension due to fluid (Ascites)

Rule Outs or Causes of Abdominal Distension – Ascites?

- Hemoabdomen: Bleeding/ Splenic Rupture
- Decreased osmotic pressure (low protein to hold the liquid in vessels)
 - Liver Disease (not making protein)
 - Losing protein :
 - Nephropathy
 - Enteropathy
- Increased pressure in the vessels (hydrostatic pressure)
 - Right Heart Disease –

Rule Outs

- List all the Possible Diagnoses
- *This list is your Rule Out list*

Rule Outs

- DCM – Dilated Cardiomyopathy
- Mitral Valve Endocardiosis
- Pericardial Effusion
- HCM – Hypertrophic Cardiomegaly
- Pneumonia
- Liver Disease
- Protein Losing Nephropathy

Eliminating Rule Outs

- After reviewing the history and clinical signs which rule outs are likely or unlikely from the list in the next slide? Give your reasons.
- See the next slide for list of rule outs

Which are likely or unlikely ?

- DCM – Dilated Cardiomyopathy
- Mitral Valve Endocardiosis
- Pericardial Effusion
- HCM – Hypertrophic Cardiomyopathy
- Pneumonia
- Hepatic Failure
- Protein losing nephropathy

Rule Outs Based on History and Clinical Signs.

- DCM – likely - weak pulses, respiratory distress in a large dog
- Mitral Valve Endocardiosis – unlikely usually in small dogs
- Pericardial Effusion – likely – muffled heart sounds
- HCM –unlikely more common in cats
- Pneumonia – unlikely – no abdominal distension in pneumonia and the temperature is low normal
- Hepatic failure – likely – distended abdomen ascites
- Protein losing nephropathy – likely - distended abdomen

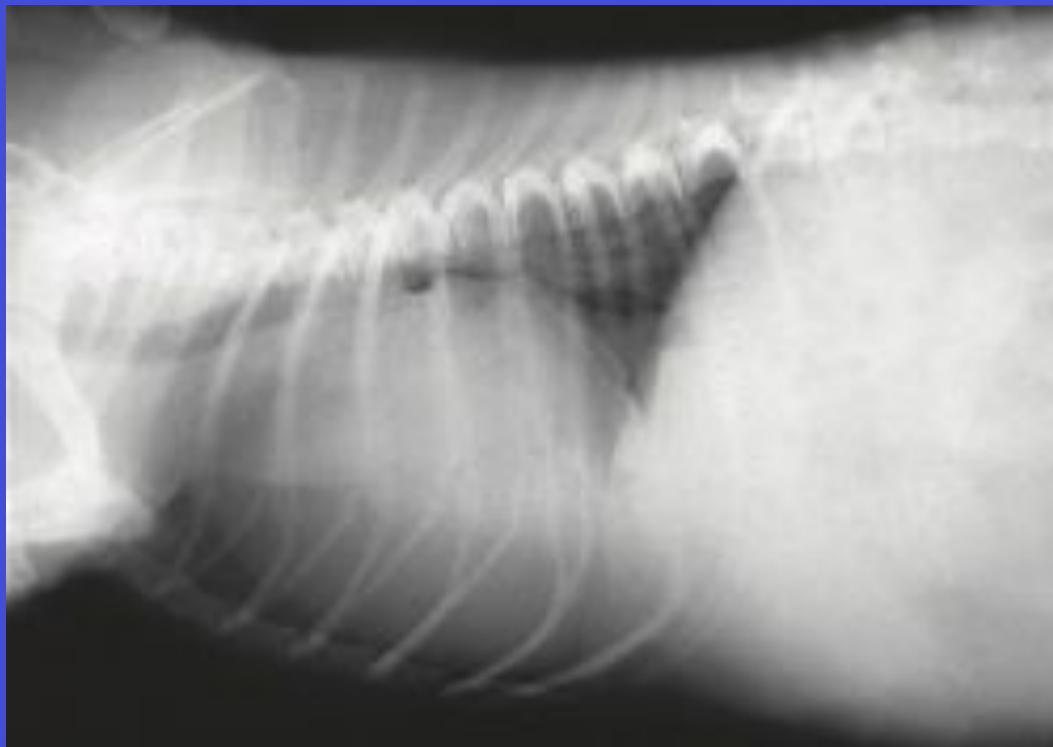
The Plan

- What is your PLAN ?

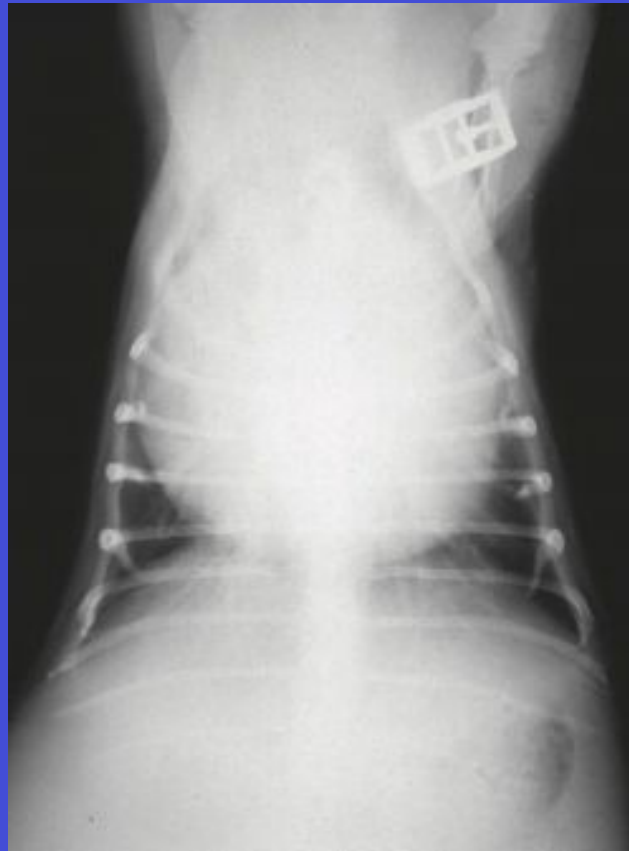
Plan

- Thoracic Radiographs
- CBC/Chemistry/Urinalysis
- Echocardiogram
- Adominocentesis – take a sample of abdominal fluid

Left Lateral Thorax



Ventral Dorsal Thorax



Radiograph Evaluation

- List all the Radiographic Lesions that you see on the previous radiographs

Radiographic Lesions

- Severe cardiac enlargement
- Globoid – very rounded heart seen on both the lateral and dorsal ventral views.
- Abdominal Ascites – white shadow in the abdomen.

CBC/Chemistry/Urinalysis

- CBC- normal
- Stress leukogram :
 - Lymphopenia
 - Neutrophilia
- Mild increase in liver enzymes
- Mild increase in BUN but normal Creatinine
- Normal Albumin
- Urine Specific Gravity – 1.035

From the CBC/Urinalysis and Blood Chemistry why can you rule out ?

- **Liver Disease** as the cause of abdominal distension
- **Protein Losing Nephropathy** as the cause of abdominal distention

Rule outs from Lab Findings

- **Liver Disease** is unlikely because the liver enzymes are only mildly increased and albumin is normal
- **Protein Losing Nephropathy** is unlikely because there is
 - No decrease in Albumin
 - the BUN is only slightly increased
 - USG shows ability to concentrate urine
 - no protein in the urine

BUN

The BUN is slightly increased.

– Is this increase:

- Pre Renal Azotemia
- Renal Azotemia
- Post Renal Azotemia

Give reasons for your answer

BUN

- The mild increase in BUN is **Pre Renal Azotemia** because the USG and Serum Creatinine are both normal . You would expect Serum Creatinine to be increased and the USG to be lower than 1.035 **in Renal Azotemia**.
- It is not **Post Renal Azotemia** because there is no history or evidence of a blocked urinary bladder.

Cardiac Ultrasound



What do you see in the U/S

- Describe what you see in the U/S of Skye's
- heart? Hint: Note the labels.

What do you See on the U/S

- There is an effusion (fluid) in the pericardial sac surrounding the heart.

What is your Diagnosis?

What is your diagnosis ?

What is the etiology?

Final Diagnosis 2

- Diagnosis: Pericardial Effusion
- Etiology: Neoplasia – Hemangiosarcoma of the right atrium is the most common cause of Pericardial Effusion in Golden Retrievers.

Treatment Plan

What will be your immediate treatment plan?

Treatment Plan 1

- Immediate Treatment Plan :
- **Pericardiocentesis** – remove the fluid in the pericardial sac.

Prognosis

- What will you tell the clients about the prognosis if you suspect a Hemangiosarcoma to be the cause of the Pericardial Effusion in this dog?

Prognosis 1

- Very poor in cases of Hemangiosarcoma of the right atrium.



The End





























































