CASE 34 (SLIDE C15-00344)
PERICARDIAL EFFUSION IN A DOG

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Signalment: 8-year-old castrated male Labrador retriever

History: Abdominal distention for one month

Physical exam: Tachycardia, muffled heart sounds, intermittent pulse deficits, and jugular pulses
DIAGNOSTICS

- Thoracic radiographs, a partial abdominal ultrasound, and an echocardiogram
- Pericardial effusion with cardiac tamponade and right-sided heart failure
- Pleural and abdominal effusion
- On echocardiogram: Mass-like lesions near the right ventricle, right auricle, and one on the ascending aorta
Pericardiocentesis yielded 40 ml of fluid, which exhibited an unusual shimmer.
### PERICARDIAL FLUID CHARACTERISTICS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Red-tinged</td>
</tr>
<tr>
<td>Clarity</td>
<td>Cloudy</td>
</tr>
<tr>
<td>RBC count</td>
<td>40,000/uL</td>
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<tr>
<td>WBC count</td>
<td>1,760/uL</td>
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<tr>
<td>Total protein</td>
<td>2.4 g/dL</td>
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<tr>
<td>Cholesterol</td>
<td>72 mg/dL</td>
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<tr>
<td>Triglycerides</td>
<td>7 mg/dL</td>
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</table>
Many cholesterol crystals
Low numbers of inflammatory leukocytes
Occasional clusters of mesothelial cells
Many erythrocytes
MESOTHELIAL CELLS

- Mesothelial origin supported with cytokeratin and vimentin
- Can occur secondary to chronic effusion regardless of primary etiology\(^1\)
- Cannot definitively differentiate between reactive versus neoplastic on cytology
INTERPRETATION

- Chronic neutrophilic inflammation; Hemorrhage; Presence of numerous cholesterol crystals; Mesothelial proliferation with atypia
CHOLESTEROL CRYSTALS

- Rare finding
- Suggest cell membrane damage
- In humans, associated with hypothyroidism, rheumatoid arthritis, and tuberculosis
- Previous reports:
  - Seen in a 9-year-old dog with hypothyroidism
  - 11-year-old basset hound with mesothelioma on necropsy; cholesterol clefts were seen on histopathology, but crystals not seen on earlier cytology
Patient developed complications due to repeated draining of fluid

Owners were reluctant to continue with treatment or explore further diagnostics

Patient was euthanized

Owners did not want a necropsy performed
ACKNOWLEDGEMENTS

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REFERENCES


