The Case of “Moe”

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Signalment

• Five-years-old
• Castrated male
• Mixed breed dog
History

• One-month history of:
  • Regurgitation
  • Increased respiratory effort
• Prior treatments from the rDVM included prednisone and theophylline with no improvement
• Thoracic radiographs performed at the rDVM revealed a mass in the mediastinum and pleural effusion.
# Pleural Fluid Analysis

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Pink</td>
</tr>
<tr>
<td>Transparency</td>
<td>Cloudy</td>
</tr>
<tr>
<td>Nucleated Cells</td>
<td>20,140/uL</td>
</tr>
<tr>
<td>RBC</td>
<td>30,000/uL</td>
</tr>
<tr>
<td>Protein (Total Solids)</td>
<td>3.3-g/dL</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.024</td>
</tr>
<tr>
<td>Triglycerides</td>
<td>140-mg/dL</td>
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</tbody>
</table>
Pleural Fluid Analysis

• Description
  • Estimated leukocyte count - 20,000 to 40,000/uL
  • 90% lymphocytes, 10% non-degenerate neutrophils
    • Majority of lymphocytes are large, have a small amount of deep blue cytoplasm often with a pale staining Golgi area, and eccentric, round to indented nuclei with dispersed chromatin and variably-visible, multiple nucleoli.

• Opinion
  • Neoplastic (large-cell lymphoma), chylous effusion.
• A fine-needle aspirate of the mediastinal mass was also consistent with large-cell lymphoma.

• Mediastinal Lymphoma
  • ~5% of lymphoma cases
  • Associated with enlarged mediastinal nodes, thymus, or both
  • Often associated with hypercalcemia (not observed in this case)
  • Often associated with a T-cell phenotype
Possible Additional Diagnostics

• Immunohistochemistry

• Flow cytometry

• PCR for antigen receptor rearrangement (PARR)
Discussion: Chylous Effusion

• Diagnostic Criteria
  • Effusion triglyceride concentration > serum triglyceride concentration
  • Effusion cholesterol-to-triglyceride ratio < 1
  • Effusion triglyceride concentration > 100-mg/dL
    • Moe’s triglycerides were 140-mg/dL
• Causes
  • Neoplasia, heartworm disease, cardiovascular disease, etc.
References
