Case #: 20
Tatiana Rothacker, DVM
Rachael Holicky, DVM
Lisa Pohlman, DVM, MS, DACVP
Jerome Neitfield, DVM, PhD, DACVP

Permission granted only for viewing on SEVPAC website
Signalment & History

- 7-year-old, male castrated, Rottweiler

- Large (~15.0 cm diameter) firm mass - left axillary region

- Decreased appetite and weight loss
<table>
<thead>
<tr>
<th>CBC results</th>
<th>Result</th>
<th>Units</th>
<th>Reference Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hematocrit</td>
<td>33</td>
<td>%</td>
<td>36-60</td>
</tr>
<tr>
<td>RBC</td>
<td>5.0</td>
<td>$10^6/uL$</td>
<td>4.8-9.3</td>
</tr>
<tr>
<td>Hemoglobin</td>
<td>11.8</td>
<td>g/dL</td>
<td>12.1-20.3</td>
</tr>
<tr>
<td>Mean Cell Volume</td>
<td>66</td>
<td>fl</td>
<td>58-79</td>
</tr>
<tr>
<td>Mean Cell Hemoglobin</td>
<td>23.6</td>
<td>pg</td>
<td>19-28</td>
</tr>
<tr>
<td>MCHC</td>
<td>35.8</td>
<td>g/dL</td>
<td>30-38</td>
</tr>
<tr>
<td>Platelet Concentration</td>
<td>331</td>
<td>$x 10^3/uL$</td>
<td>170-400</td>
</tr>
<tr>
<td>WBC</td>
<td>14.3</td>
<td>$10^3/uL$</td>
<td>4.0-15.5</td>
</tr>
<tr>
<td>Segmented Neutrophil</td>
<td>11,440</td>
<td>/uL</td>
<td>2,060 – 10,600</td>
</tr>
<tr>
<td>Band Neutrophil</td>
<td>286</td>
<td>/uL</td>
<td>0-300</td>
</tr>
<tr>
<td>Lymphocyte</td>
<td>1,144</td>
<td>/uL</td>
<td>690-4500</td>
</tr>
<tr>
<td>Monocyte</td>
<td>858</td>
<td>/uL</td>
<td>0-840</td>
</tr>
<tr>
<td>Eosinophil</td>
<td>572</td>
<td>/uL</td>
<td>0-1200</td>
</tr>
</tbody>
</table>
Imaging Studies

• Moth eaten lysis:
  – proximal metaphysis of the left humerus
  – neck and spine of the left scapula

• Sternal lymphadenopathy

• Soft tissue opacity nodule superimposed over the right cranial lung lobe at the level of the fourth rib
  – Differentials: granuloma, primary or metastatic neoplasia, and pulmonary osteoma
Cytologic Interpretation

- Cytologic findings are most consistent with malignant neoplasia, likely metastatic to the lymph node.

- Differentials: histiocytic sarcoma, plasma cell tumor, and anaplastic lymphoma.

- Mild neutrophilic inflammation

- Stain for ALP- negative
Outcome

• Owners elected to euthanize the dog due to his poor prognosis

• Axillary mass was removed for histopathologic examination

• Necropsy was declined
Histopathologic Diagnosis

• Round cell neoplasm with differentials including tumor of histiocytic origin or plasma cell tumor.

• Can not rule out anaplastic lymphoma.
Special Stains

• MUM-1 – negative
• CD79a – negative
• CD3 – negative
• CD20 – negative
Special Stains

CD-18 (Patient)  

CD-18 (Control)  

Permission granted only for viewing on SEVPAC website
Special Staining

**Iba-1 (Patient)**

**Iba-1 (Control)**

Permission granted only for viewing on SEVPAC website
Diagnosis

• Tumor of histiocytic origin

• Differentials to consider:
  – Histiocytic sarcoma (top differential)
  – Systemic histiocytosis
    • Absence of cutaneous, ocular, or nasal mucosal lesions in this patient makes this diagnosis less likely.
Histiocytic Tumors

• “Histiocyte” - used to describe cells of dendritic cell (DC) or macrophage lineage

• Histiocytic proliferative diseases:
  – Histiocytic Sarcoma Complex (localized and disseminated)
  – Systemic Histiocytosis
  – Histiocytoma
  – Cutaneous Histiocytosis
  – Cutaneous Langerhans Cell Histiocytosis
  – Etc.
Histiocytic Sarcoma

• Arises from interstitial dendritic cells

• Frequently seen in middle aged Bernese Mountain Dogs, though Rottweilers, Golden Retrievers, and Flat-Coated Retrievers are also predisposed to the disease

• Clinical signs (often vague):
  – Anorexia
  – Weight loss
  – Lethargy
  – Additional clinical signs (vary depending on the organs involved)

• Mild non-regenerative anemia on CBC is often seen in dogs
A typical cytology (not the presented case)

- Pleomorphic, mononuclear, and multinucleated cells which often have marked cytologic atypia. Spindle cells and phagocytosis may also be present.

Splenic aspirates from a Bernese Mountain dog with a malignant histiocytic neoplasm. KSVDL, 2005
References


Permission granted only for viewing on SEVPAC website
Acknowledgments

Faculty Mentors:
Dr. Lisa Pohlman
Dr. Jerome Neitfield

Resident:
Dr. Rachael Holicky

Permission granted only for viewing on SEVPAC website