Hindlimb Lameness in a Cat

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Signalment & History

• Fourteen year-old spayed female DSH cat

• Initial presentation to AUVTH (2/23/2017):
  • Six-month history of left hindlimb mass, midway between hip and stifle, and lameness
  • Surgery offered by rDVM – delayed due to persistent anemia and inflammatory leukogram
  • Firm, ulcerated 6.5cm x 7.2cm mass with purulent drainage

• Blood drawn for CBC and serum biochemistry panels...
<table>
<thead>
<tr>
<th>TEST</th>
<th>PATIENT</th>
<th>REFERENCE INTERVAL (RI)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hct</strong></td>
<td>21.5%</td>
<td>30.0–45.0%</td>
</tr>
<tr>
<td><strong>WBC</strong></td>
<td>80.76 x 10³ cells/μL</td>
<td>5.09–17.41 (x 10³ cells/μL)</td>
</tr>
<tr>
<td><strong>PLT</strong></td>
<td>294 x 10³/μL</td>
<td>152–518 (x 10³/μL)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WBC Differential</th>
<th>PATIENT</th>
<th>REFERENCE INTERVAL (RI) (x 10³ cells/μL)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SEG</strong></td>
<td>73.492 (91%)</td>
<td>2.600 - 10.400</td>
</tr>
<tr>
<td><strong>BAND</strong></td>
<td>1.615 (2%)</td>
<td>0.000-0.300</td>
</tr>
<tr>
<td><strong>LYMPH</strong></td>
<td>3.230 (4%)</td>
<td>0.390 - 6.730</td>
</tr>
<tr>
<td><strong>MONO</strong></td>
<td>2.423 (3%)</td>
<td>0.160 - 1.160</td>
</tr>
</tbody>
</table>
Blood Smear Review – 2/23/2017

100X, modified Wright stain
Blood Smear Review – 2/23/2017

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Clinical Pathologist’s Comments

• Extreme Neutrophilic Leukocytosis
  • Inflammatory (tissue necrosis) v. Paraneoplastic

• Moderate, non-regenerative anemia
  • Likely anemia of chronic inflammation (disease)

• Patient referred to surgical oncology
  • Limb amputated – 2/24/2017
Histopathology

200X, H&E stain

200X, Vimentin

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Histopathologic Description & Diagnosis

- Spindloid to polygonal cells
- Storiform pattern / loose, short, interlacing bundles and sheets within a scant fibrovascular stroma
- Pale eosinophilic micro-vacuolated or myxomatous cytoplasm
- Ill-defined cellular borders
- Vimentin (+) ; SMA, Desmin, and S-100 (-)
- *Numerous necrotic foci* within neoplastic mass and extending into adjacent skeletal musculature
- Diagnosis ➔ Fibrosarcoma

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Extreme Neutrophilic Leukocytosis (ENL)

- Differentiate from chronic myeloid leukemia (CML)
- ENL has a non-neoplastic origin
- High total leukocyte count (typically > 50,000 cells/µL and > 25,000 neutrophils)

- Associated with
  - acute or persistent infectious processes (e.g. pyothorax, septic peritonitis)
  - extensive tissue necrosis
  - immune-mediated process
  - (neoplasia)
  - (paraneoplastic response)

Harvey JW, *Veterinary Hematology – A Diagnostic Guide and Color Atlas*. (2012); 144-146
## Post-Operative

<table>
<thead>
<tr>
<th>DATE</th>
<th>WBC</th>
<th>Neutrophils (Absolute)</th>
<th>Hematocrit</th>
</tr>
</thead>
<tbody>
<tr>
<td>2/23/2017</td>
<td>80,760</td>
<td>73,492</td>
<td>21.5%</td>
</tr>
<tr>
<td>2/27/2017</td>
<td>45,280</td>
<td>39,394</td>
<td>27.7%</td>
</tr>
<tr>
<td>3/15/2017</td>
<td>9,140 (WRI)</td>
<td>7,952 (WRI)</td>
<td>37.9% (WRI)</td>
</tr>
</tbody>
</table>
Acknowledgments

Eric J. Fish, DVM, DACVP (Clinical)
Stephanie Shrader, DVM, DACVP (Anatomic)
Pete W. Christopherson, DVM, PhD, DACVP (Clinical)
Questions?