Signalment & History

- 4-year-8-month-old, Female, Mixed breed cow, 545.5 kg

Presented to Veterinary Health Center for:
- Anorexia
- Hunched up appearance
- Excrement dry & dark:
  - On day of presentation bloody & mucoid
<table>
<thead>
<tr>
<th>CBC</th>
<th>Results</th>
<th>Units</th>
<th>Reference Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leukocyte count (corrected)</td>
<td>10.1</td>
<td>K/uL</td>
<td>4-12</td>
</tr>
<tr>
<td>Segmented Neutrophil</td>
<td>2.1</td>
<td>K/uL</td>
<td>1-5</td>
</tr>
<tr>
<td>Band Neutrophil</td>
<td>0.8 H</td>
<td>K/uL</td>
<td>0-0.2</td>
</tr>
<tr>
<td>Lymphocyte</td>
<td>6.4</td>
<td>K/uL</td>
<td>2.5-7.5</td>
</tr>
<tr>
<td>Monocyte</td>
<td>0.6</td>
<td>K/uL</td>
<td>0.025-0.85</td>
</tr>
<tr>
<td>Eosinophil</td>
<td>0.2</td>
<td>K/uL</td>
<td>0-1.6</td>
</tr>
<tr>
<td>Nucleated Erythrocyte</td>
<td>57</td>
<td>Per 100 WBC</td>
<td>No Reference Interval</td>
</tr>
<tr>
<td>Erythrocyte</td>
<td>1.36 L</td>
<td>M/uL</td>
<td>5-8</td>
</tr>
<tr>
<td>Hemoglobin</td>
<td>3.9 L</td>
<td>g/dL</td>
<td>8.5-14</td>
</tr>
<tr>
<td>Hematocrit (calculated)</td>
<td>10 L</td>
<td>%</td>
<td>26-42</td>
</tr>
<tr>
<td>Hematocrit (spun)</td>
<td>13 L</td>
<td>%</td>
<td>26-46</td>
</tr>
<tr>
<td>Fibrin-HPT</td>
<td>0.2 L</td>
<td>g/dL</td>
<td>0.3-0.7</td>
</tr>
<tr>
<td>Mean Cell Volume</td>
<td>73 H</td>
<td>fL</td>
<td>32-51</td>
</tr>
<tr>
<td>Mean Cell Hemoglobin</td>
<td>39 H</td>
<td>g/dL</td>
<td>33-37</td>
</tr>
</tbody>
</table>
Diagnosis: Anaplasmosis

- Howell-Jolly Body
- Anaplasma marginale
- Artifact

Blood film, 1000x
Additional Tests & Treatment

- **Treatment:**
  - Oral fluids
  - Oxytetracycline (LA-200) 45ml
    - subcutaneously

- **Blood Parasite Exam Follow-up:**
  - *Anaplasma marginale* organisms not positively identified

- **Outcome:**
  - Recovered from clinical disease
Anaplasmosis

- Federally reportable hemolytic disease
  - Characterized by progressive anemia

- Epidemiology
  - Endemic
    - Tropical & Subtropical regions

www.cdc.gov
• **A. marginale**  
  – Obligate intraerythrocytic rickettsia  
  
• **Transmission:**  
  – Arthropod vector: *Dermacentor* spp  
  – Mechanically through blood
Anaplasmosis

- Prepatent period averages 28 days
  - Bacteremia

- Pinpoint membrane bound inclusion bodies
  - around edge of corpuscle with 4 - 8 rickettsia

- Infected erythrocytes are abnormal
  - Phagocytosis by macrophages

- Result:
  - Mild - severe anemia & icterus
Anaplasmosis

• Possible outcomes:
  – Death
  – Recovery from infection; convalescent stage
    • Last until normal blood values restored
  
• Carrier stage
  • Reservoir for anaplasmosis

• Periods of immunosuppression result in low-level bacteremia
Diagnosis & Treatment

• Diagnosed:
  – PCR, Blood film evaluation

• Treatment:
  – Oxytetracycline or chlortetracycline

• Prognosis:
  – Age, severity, dose

• Future:
  – Veterinarian Feed Directive
  – Vaccines
Acknowledgements

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• Dr. Tatiana Rothacker

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References


