Signalment & History

3-year-old Nigerian Dwarf wether

- >1 month history of weight loss and anorexia
- Limited response to antibiotics, NSAIDs, and anti-viral treatments
Abdominal CT:
- Multifocal lymphadenopathy
- Abnormal contour and internal architecture of liver
- Thickened rectal wall

FNA and cytology of prescapular LN = mild granulomatous inflammation

Caseous lymphadenitis and Johne’s: Negative
Post Mortem Findings

In your slide set (Slide P14-0002):

- Kidney
- Spleen
- Pancreas
- Abomasum
Abomasum
Liver

H&E

CR

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Morphologic Diagnoses

- Chronic, multifocal to coalescing, amyloidosis of the kidneys, pancreas, spleen, and abomasal mucosa

- Chronic hepatic fibrosis with biliary hyperplasia, mild lymphoplasmacytic hepatitis, and amyloidosis

- Systemic AA Amyloidosis
Amyloidosis

- Abnormal protein folding → extracellular accumulation of insoluble proteins

- 2 categories of protein that form a amyloid:
  - Normal proteins with inherent tendency to fold improperly (IgG light chains, SAA)
  - Mutant proteins

- Classification of amyloidosis based on the accumulated amyloid protein fibril and the precursor
<table>
<thead>
<tr>
<th>Amyloid Protein</th>
<th>Protein Precursor</th>
<th>Related Disease</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA</td>
<td>apoSAA (serum amyloid-associated)</td>
<td>Secondary or reactive amyloidosis</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Familial amyloidosis</td>
</tr>
<tr>
<td>AL</td>
<td>λ or κ light chains</td>
<td>Plasma cell dyscrasias</td>
</tr>
<tr>
<td>IAPP</td>
<td>Islet amyloid polypeptide</td>
<td>Islet amyloidosis in cats</td>
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<tr>
<td>Aβ</td>
<td>Aβ protein precursor</td>
<td>Cerebrovascular amyloidosis and senile plaques</td>
</tr>
<tr>
<td>APrPsc</td>
<td>Prion protein</td>
<td>Prion diseases</td>
</tr>
</tbody>
</table>
Amyloidosis

Diagnosis based on:

- Histopathology
- Congo Red staining
  - Retention after potassium permanganate pretreatment may indicate AL amyloid
- Immunohistochemistry
  - Anti-AA antibodies
  - Anti-β-light chain antibodies
- Electron microscopy
  - 7-10nm diameter nonbranching fibrils
Systemic Amyloidosis

AA amyloidosis is the most common

- Long-standing infectious or inflammatory process
  - Chronic suppurative pneumonia
  - Caseous lymphadenitis
  - Trupurella pyogenes
- Systemic deposition
- Some species differences, reason unknown
- Kidney often most affected

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Thank You!

VMRCVM Histopathology Lab
- Jennifer Rudd
- April Huffman

April Culip, VMRCVM Necropsy Technician

Senior Pathologists (Dr. Phillip Sponenberg) and Clinicians (Dr. Nimet Browne)

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