N15-174

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Signalment and History

- 15 year old neutered male domestic shorthair cat
- 16 day history of hindlimb paralysis
  - 1 week duration of inappetence and lethargy
- Physical exam findings on presentation to UFVMC
- Bloodwork
Gross and histologic examination

• Gross examination
  • Multiple disc spaces contained fragmented, tan material
    • Herniation of discs T1-T2, T9-T10 and L3-L4
    • Most consistent with intervertebral disc disease

• Histologic examination
  • Spindle to polygonal cell population within the leptomeninges
  • Extending from the myelencephalon to the cauda equina
Anti-glial fibrillary acidic protein (GFAP)
## Immunohistochemistry stains

<table>
<thead>
<tr>
<th>Immunohistochemistry stain</th>
<th>Cells expected to stain</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>GFAP</td>
<td>Astrocytes and ependymal cells</td>
<td>Strong cytoplasmic and matrix staining</td>
</tr>
<tr>
<td>Olig 2</td>
<td>Oligodendrocytes</td>
<td>Strong nuclear staining</td>
</tr>
<tr>
<td>CD3</td>
<td>T-cell marker</td>
<td>Rare lymphocytes</td>
</tr>
<tr>
<td>Iba-1</td>
<td>Macrophages</td>
<td>Few macrophages</td>
</tr>
<tr>
<td>CD45</td>
<td>Leukocytes</td>
<td>Negative</td>
</tr>
<tr>
<td>PAX5</td>
<td>B cell</td>
<td>Negative</td>
</tr>
</tbody>
</table>

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Morphologic diagnosis

- Primary leptomeningeal gliomatosis, spinal cord and mylencephalon
Gliomatosis overview

• Disease characterized by widespread dissemination of neoplastic cells in the subarachnoid space
  • Neoplastic cells are thought to originate from glial rests within the meninges

• Rarely reported in the dog
• First report of primary diffuse leptomeningeal gliomatosis in a cat
Gliomatosis overview

- Primary gliomatosis - neoplastic cells do not invade the neuropil
  - Human criteria for primary leptomeningeal gliomatosis
    - No attachment of the tumor to parenchyma
    - No evidence of intraaxial lesions
    - Presence of leptomeningeal encapsulation of the tumor
- Secondary gliomatosis - neoplastic cells originate from the neuropil

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Thank you

• Anatomic pathology resident-mates
  • Dr. Jeffrey Abbott
  • Dr. Andrew Miller

References