Canine Uveal Melanocytic Neoplasia

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12th Biannual William Magrane Basic Science Course in Veterinary and Comparative Ophthalmology
<table>
<thead>
<tr>
<th>Neoplasm</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uveal melanocytoma (total)</td>
<td>1446</td>
<td>41.5</td>
</tr>
<tr>
<td>anterior uvea</td>
<td>1361</td>
<td></td>
</tr>
<tr>
<td>choroidal</td>
<td>85</td>
<td></td>
</tr>
<tr>
<td>Iridociliary adenoma</td>
<td>734</td>
<td>21.1</td>
</tr>
<tr>
<td>Uveal malignant melanoma (total)</td>
<td>458</td>
<td>13.1</td>
</tr>
<tr>
<td>anterior uvea</td>
<td>443</td>
<td></td>
</tr>
<tr>
<td>choroidal</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Lymphoma</td>
<td>218</td>
<td>6.3</td>
</tr>
<tr>
<td>Metastatic neoplasia (other)</td>
<td>204</td>
<td>5.9</td>
</tr>
<tr>
<td>Iridociliary adenocarcinoma</td>
<td>152</td>
<td>4.4</td>
</tr>
<tr>
<td>Optic nerve meningioma</td>
<td>97</td>
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<tr>
<td>Histiocytic sarcoma</td>
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<td>Schwannoma</td>
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<tr>
<td>Astrocytoma</td>
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<td>0.7</td>
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<tr>
<td>Medulloepithelioma</td>
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<td>0.7</td>
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<tr>
<td>Total</td>
<td>3496</td>
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</tr>
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</table>

Labelle AL et al. VO 2013
General Considerations

- Most common ocular neoplasms in dogs
- Uveal melanocytic neoplasia 55%
- Middle-aged to older
- Mass expanding the iris and extending into the anterior chamber
- Mass posterior to the iris that anteriorly displaces the iris face
- May be thinning of the sclera with a pigmented mass

Labelle et al. VO 2013; Giuliano EA et al. VO 1999; Wilcock B et al. Vet Path 1986
Melanocytoma

• Most common in the iris and ciliary body, typically affecting both
• 94% anterior, 6% choroidal
• 75% of anterior melanocytic neoplasms are benign, 85% of choroidal melanocytic neoplasms are benign
• Readily efface the iridocorneal angle
• Many expand along the corneoscleral meshwork in the deep peripheral corneal stroma
• Scleral and extrascleral extension is common (not a feature of malignancy)
Melanocytoma

• Similar histologic appearance independent of their origin
• Variable proportions of heavily pigmented spindle cells and discohesive heavily pigmented plump polyhedral cells
• Mitoses are rare to absent (<4 in 10 HPF).
• Individualized pigmented cells may be seen in the anterior and posterior chambers and vitreous
Melanocytoma

- Necrosis and infiltration of melanophages are common
- Intraocular hemorrhage, pre-iridal fibrovascular membrane, asteroid hyalosis, and glaucoma are frequent secondary findings
- Retinal detachment is expected with choroidal melanocytomas
Melanocytoma

From Veterinary Comparative Pathology, 2010
Melanocytoma
Melanocytoma
Melanocytoma
Melanocytoma
Melanocytoma
Malignant Melanoma

- Most common in the iris and ciliary body, typically affecting both
- 97% anterior, 3% choroidal
- 25% of anterior melanocytic neoplasms are malignant, 15% of choroidal melanocytic neoplasms are malignant
- No histologic features can reliably predict metastasis

- Readily efface the iridocorneal angle
- Many expand along the corneoscleral meshwork in the deep peripheral corneal stroma
- Scleral and extrascleral extension is common
Malignant Melanoma

- Similar histologic appearance independent of their origin
- Spindle cells to polygonal cells
- Variably pigmented
- Moderate to severe pleomorphism
- Mitotic index of 5 or more
Malignant Melanoma

• Necrosis and infiltration of melanophages are common
• Intraocular hemorrhage, pre-iridal fibrovascular membrane, asteroid hyalosis, and glaucoma are frequent secondary findings
• Retinal detachment is expected with choroidal involvement
Malignant Melanoma
Malignant Melanoma
Malignant Melanoma
Malignant Melanoma