Ocular Neoplasia
Bumps in, on, and behind the eye

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Topic Outline & Objectives

- Ocular & periocular masses
  - Eyelids
  - 3rd eyelid
  - Cornea & sclera
  - Uvea
  - Orbit
    - Exophthalmos vs buphthalmos

- Differential diagnoses
  - Suggestive findings

- Treatment options

- Feline-specific ocular masses

Early Detection and Treatment is Key
Early Detection and Treatment is Key

One month later

Eyelid Masses

**Dogs**
- Minimally invasive
- 85-90% are benign
- Low rate of metastasis
- Responsive to therapy
  - Cryotherapy or surgery

**Cats**
- Majority are malignant

Common DDx
- Meibomian gland neoplasia
  - Adenoma
  - Adenocarcinoma
  - Epitheliuma
  - Papilloma
  - Histiocytoma
  - Melanoma
  - Mast cell tumor
  - Cutaneous lymphoma
  - Impacted meibomian gland
    - Chalazion, sty

If it's important enough to remove, it's important enough to submit.
Eyelid Masses

**Common DDx**
- Meibomian gland neoplasia
  - Adenoma
  - Adenocarcinoma
  - Epitheloma
- Neoplasm
- Histocytoma
- Myelocytoma
- Mast cell tumor
- Cutaneous lymphoma
- Impacted meibomian gland
- Chalazion, stye

**Suggestive Findings**
- Located on eyelid margin

**Treatment Options**
- Continued monitoring
- Surgical excision or cryo

**Limits of surgical excision**
- Affects less than 33% of lid length
- Exception in longer lids

From: Slatter’s Fundamentals of Veterinary Ophthalmology 5th Edition
Eyelid Masses

Common DDx
- Meibomian gland neoplasia
- Adenoma
- Adenocarcinoma
- Epitheloma
- Papilloma
- Histocytoma
- Histiocytoma
- Mast cell tumor
- Cutaneous lymphoma
- Impacted meibomian gland
- Chalazion, stye

Treatment Options
- Surgical excision
  - 10% recurrence

Eyelid Masses

Common DDx
- Meibomian gland neoplasia
- Adenoma
- Adenocarcinoma
- Epitheloma
- Papilloma
- Histocytoma
- Histiocytoma
- Mast cell tumor
- Cutaneous lymphoma
- Impacted meibomian gland
- Chalazion, stye

Treatment Options
- Debulk and cryotherapy
  - 15% recurrence

Eyelid Masses

Common DDx
- Melanoma
- Adenoma
- Adenocarcinoma
- Papilloma
- Histiocytoma
- Histocytoma
- Mast cell tumor
- Cutaneous lymphoma
- Impacted meibomian gland
- Chalazion, stye

Suggestive Findings
- Cauliflower-like appearance

Squamous papilloma
Eyelid Masses

**Common DDx**
- Meibomian gland neoplasia
- Adenoma
- Adenocarcinoma
- Papilloma
- Histioctoma
- Mast cell tumor
- Cutaneous lymphoma
- Impacted meibomian gland

**Treatment Options**
- Similar therapy & prognosis as meibomian gland tumors

**Suggestive Findings**
- Young dogs
- Tan to pink, alopecic mass

**Treatment Options**
- Spontaneous regression
- Surgical resection or cryo

*BERNESE MOUNTAIN DOG = BAD*
Eyelid Masses

**Common DDx**
- Meibomian gland neoplasia
- Adenoma
- Adenocarcinoma
- Epitheliotumor
- Melanoma
- Mast cell tumor
- Cutaneous lymphoma
- Impacted meibomian gland
- Chalazion, stye

**Suggestive Findings**
- Darkly pigmented, smooth
- Possible to be on lid margin

**Photo courtesy of Dr. Anne Barger**

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Eyelid Masses

**Common DDx**
- Meibomian gland neoplasia
- Adenoma
- Adenocarcinoma
- Epitheliotumor
- Melanoma
- Mast cell tumor
- Cutaneous lymphoma
- Impacted meibomian gland
- Chalazion, stye

**Suggestive Findings**
- "Comes and goes"
- Mast cells on cytology

**Treatment Options**
- Surgical resection or cryo
- Prognosis is good

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Eyelid Masses

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- Impacted meibomian gland
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**Suggestive Findings**
- Darkly pigmented, smooth
- Possible to be on lid margin

**Photo courtesy of Dr. Anne Barger**
Eyelid Masses

Common DDx
- Meibomian gland neoplasia
- Adenoma
- Adenocarcinoma
- Epithelium
- Papilloma
- Histiocytoma
- Melanoma
- Mast cell tumor
- Cutaneous lymphoma
- Impacted meibomian gland
- Chalazion, stye

Treatment Options
- Surgical resection is best
- Intralesional triamcinolone
  - 1 mg triamcinolone diluted in 1 mL 0.45% NaCl - may recur
  - Triamcinolone causes apoptosis
  - Hypotonic saline causes lysis
- Exenteration with rotational skin graft

Suggestive Findings
- Locally extensive, irregular
- Often ulcerated

Diagnosis
- Often requires biopsy vs cytology
- Rule out auto-immune skin disease

Eyelid Masses

Common DDx
- Meibomian gland neoplasia
- Adenoma
- Adenocarcinoma
- Epithelium
- Papilloma
- Histiocytoma
- Melanoma
- Mast cell tumor
- Cutaneous lymphoma
- Impacted meibomian gland
- Chalazion, stye

Treatment Options
- Surgery (reconstructive) if focal
- Medical if metastatic
Eyelid Masses

Common DDx
- Meibomian gland neoplasia
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  - Adenocarcinoma
  - Epithelioma
- Papilloma
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- Impacted meibomian gland
  - Chalazion, stye

Treatment Options
- Lance and extrude material
- Neo/poly/dex ointment BID-TID

3rd Eyelid Masses

Common DDx
- Adenoma
- Adenocarcinoma
- Prolapsed gland
- Everted cartilage
- Follicular hyperplasia

- Signalment can help determine the diagnosis

Suggestive Findings
- Older dogs
- Progressively growing mass
- Multilobular appearance
- Entire 3rd eyelid visible
3rd Eyelid Masses

Common DDx
- Adenoma
- Adenocarcinoma
- Prolapsed gland
- Everted cartilage
- Follicular hyperplasia

Treatment Options
- Complete surgical excision
- Prognosis good

3rd Eyelid Surgical Resection

Suggestive Findings
- Young to middle-aged Bulldog or Cocker Spaniel
- Smooth appearance
- Sometimes inflamed
- 3rd eyelid may not be visible
3rd Eyelid Masses

**Common DDx**
- Adenoma
- Adenocarcinoma
- Prolapsed gland
- Everted cartilage
- Follicular hyperplasia

**Treatment Options**
- Pocket technique to replace
- Orbital rim tacking

**Suggestive Findings**
- Large breeds – Great Dane
  See smooth bend in cartilage

**Treatment Options**
- Monitor (purely cosmetic)
- Thermocoagulation
3rd Eyelid Masses

Common DDx
- Adenoma
- Adenocarcinoma
- Prolapsed gland
- Follicular hyperplasia

Suggestive Findings
- Pale multifocal masses
- Often present on bulbar surface (grasp & invert eyelid)

- DO NOT remove the 3rd eyelid unless necessary

Prolapsed gland of the 3rd eyelid
Smooth appearance
3rd eyelid not visible

Adenoma of the 3rd eyelid gland
Lobular appearance
3rd eyelid entirely visible

Prolapsed gland and deep stromal ulcer
 Conjunctival flap
Corneal & Scleral Masses

Common DDx
- Limbal melanocytoma
- Hemangiosarcoma
- Dermoid
- Nodular episcleritis
- Pannus (superficial chronic keratitis)
- Granulation tissue
- Iris prolapse

Suggestive Findings
- Located at limbus
- Corneal degeneration
- Very vascular

Treatment Options
- Debulking and cryotherapy
- Enucleation if problematic
- Resection with cryotherapy
- Enucleation (may be metastatic)
Corneal & Scleral Masses

**Common DDx**
- Limbal melanocytoma
- Hemangiopericytoma
- Dermoid
- Nodular episcleritis
- Pannus (superficial chronic keratitis)
- Granulation tissue
- Iris prolapse

**Suggestive Findings**
- Present since birth
- Hair protruding from mass

**Treatment Options**
- Surgical resection
  - Due to corneal irritation

**Suggestive Findings**
- Smooth, raised, red mass
- Adjacent corneal edema

**Treatment Options**
- Topical therapy
  - CsA or tacrolimus
  - 0.1% dexamethasone
  - Systemic prednisone
  - Try topical first

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Corneal & Scleral Masses

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- Iris prolapse

Suggestive Findings
- German Shepherds

Treatment Options
- Cyclosporine or tacrolimus

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Corneal & Scleral Masses

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- Hemangiosarcoma
- Dermoid
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- Granulation tissue
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Treatment Options
- Topical therapy
  - Cyclosporine or tacrolimus
  - Dexamethasone

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Corneal & Scleral Masses

Common DDx
- Limbal melanocytoma
- Hemangiosarcoma
- Dermoid
- Nodular episcleritis
- Pannus (superficial chronic keratitis)
- Granulation tissue
- Iris prolapse

Suggestive Findings
- Known trauma
- Currently treating ulcer
- Anterior synechia
- Associated corneal edema

Treatment Options
- Surgical stabilization (best)
  - Medical management
    - Topical Ofloxacin
    - Systemic antibiotics
    - Systemic NSAIDs
    - +/- tarsorrhaphy
Uveal Masses

**Common DDx**
- Melanoma
  - Iridal
  - Choroidal
- Ciliary body neoplasia
  - Adenocarcinoma
  - Adenoma
- Lymphoma
- Uveal cysts

**Suggestive Findings**
- Darkly pigmented & raised
- Dyscoria

**Treatment Options**
- Enucleation (uveitis, glaucoma)
- Laser photocoagulation
  - Unreliable if not small

*Uveal melanoma contacting lens*

*Cataract formation from touching lens*
Uveal Masses

**Suggestive Findings**
- Pink or red in color
- Located behind iris
- May be displacing lens

**Common DDx**
- Melanoma
- Iridal neoplasia
- Choroidal neoplasia
- Ciliary body neoplasia
- Adenocarcinoma
- Adenoma
- Lymphoma
- Uveal cysts

**Treatment Options**
- Enucleation (uveitis, glaucoma)
- Cryotherapy
- Unpredictable

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**Suggestive Findings**
- Frequently have uveitis
- Lymphadenomegaly

**Common DDx**
- Melanoma
- Iridal neoplasia
- Choroidal neoplasia
- Ciliary body neoplasia
- Adenocarcinoma
- Adenoma
- Lymphoma
- Uveal cysts

**Treatment Options**
- Topical corticosteroids
- Systemic corticosteroids
- Systemic chemotherapy
**Uveal Masses**

**Common DDx**
- Melanoma
- Pigment epithelial detachment
- Choroidal neovascularization
- Adenocarcinoma
- Adenoma
- Lymphoma
- Uveal cyst

**Suggestive Findings**
- Transilluminated easily
- Smooth and round
- Free-floating or narrow base

**Treatment Options**
- Typically none needed
- Diode laser photocoagulation if obscuring vision

*If present in Golden Retriever, may be suggestive of Golden Retriever/pigmentary uveitis. Often results in 2nd glaucoma.*

**Orbital Masses**

**Common DDx**
- Metastatic Neoplasia
  - Nasal adenocarcinoma
  - Squamous cell carcinoma
  - Hemangiosarcoma
  - Lymphoma
- Primary Orbital Neoplasia
  - Any tissue origin
  - Abscess
  - Foreign body
  - Tooth root abscess
**Orbital Masses**

**Common DDx**
- Metastatic Neoplasia
- Nasal adenocarcinoma
- Squamous cell carcinoma
- Hemangiosarcoma
- Lymphoma
- Primary Orbital Neoplasia
  - Any tissue origin
  - Abscess
  - Foreign body
  - Tooth root abscess

**Suggestive Findings**
- Chronic & slowly progressive
- Typically non-painful
- +/- decreased nasal air flow

**Treatment Options**
- Generous ointment if keratitis is present
- Enucleation or exenteration for palliation

**Orbital Masses**

**Common DDx**
- Metastatic Neoplasia
- Nasal adenocarcinoma
- Squamous cell carcinoma
- Hemangiosarcoma
- Lymphoma
- Primary Orbital Neoplasia
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- Chronic & slowly progressive
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**Orbital Masses**

**Common DDx**
- Metastatic Neoplasia
- Nasal adenocarcinoma
- Squamous cell carcinoma
- Hemangiosarcoma
- Lymphoma
- Primary Orbital Neoplasia
  - Any tissue origin
  - Abscess
  - Foreign body
  - Tooth root abscess

**Suggestive Findings**
- Acute and often painful
- Rapid response to therapy
Orbital Masses

Common DDx
- Metastatic Neoplasia
- Nasal adenocarcinoma
- Squamous cell carcinoma
- Hemangiosarcoma
- Lymphoma
- Primary Orbital Neoplasia
- Any tissue origin

Abscess
- Foreign body
- Tooth root abscess

Treatment Options
- Clavamox or Simplecef x 3-4 weeks
- Systemic NSAID x 2-3 weeks

Exophthalmos vs Buphthalmos

Exophthalmos
- Caused by an orbital mass
- Abscess, neoplasia, mucocele
- Typically maintain vision
- Decreased retropulsion
- Globes are same size

Buphthalmos
- Caused by chronic glaucoma
- Blind & lose light perception
- Typically have normal or near-normal retropulsion
- Globes are different sizes

Specific Feline Masses

Common DDx
- Cornea
  - Eosinophilic keratitis
  - Uvea
    - Melanoma (possibly amelanotic)
    - Lymphoma
    - Uveal cysts
Feline Eosinophilic Keratoconjunctivitis

**Suggestive Findings**
- Eosinophils on cytology
- Roughened, pink to white corneoconjunctival mass

**Treatment Options**
- Topical 0.2-2% cyclosporine or 0.02% tacrolimus
- Topical corticosteroids
- Megestrol acetate: 5 mg/kg q24 hrs x 1 week, then 2.5 mg/kg q24 hrs x 1 week, then 2.5 mg/kg q48 hours x 1 week.

Feline Uveal Melanoma

**Suggestive Findings**
- Darkly pigmented, raised, "velvety" lesion
- Dyscoria
- Benign melanosis tends to be bronze, flat, and does not distort iris architecture

**Treatment Options**
- Monitoring every 3-4 months
- Laser photocoagulation
- Enucleation
- Especially with uveitis or 2º glaucoma

Feline Uveal Cysts

**Suggestive Findings**
- Often darkly pigmented
- Different than in dogs
- Smooth

**Treatment Options**
- None needed
Iridal Lymphoma

**Suggestive Findings**
- Smooth, pink iridal mass

**Treatment Options**
- Topical corticosteroids
- Systemic corticosteroids
- Systemic chemotherapy
- Enucleation if 2nd glaucoma

QUESTIONS?

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