


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



Eyelid Masses

Dogs

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



Cats

- Majority are malignant



Eyelid Masses

Common DDX

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


- If it's important enough to remove, it's important enough to



Eyelid Masses

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 - Chalazion, sty



Suggestive Findings


- Located on eyelid margin

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Eyelid Masses

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- Impacted meibomian gland
 - Chalazion, sty



Treatment Options

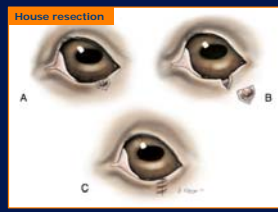
- Continued monitoring
- Surgical excision or cryo

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Eyelid Masses

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- Papilloma
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 - Chalazion, sty



Treatment Options

- Surgical excision
- 10% recurrence

Limits of surgical excision

- Affects less than 33% of lid length
 - Exception in longer lids

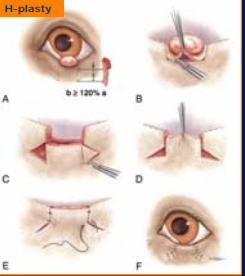
From: Slatter's Fundamentals of Veterinary Ophthalmology 5th Edition

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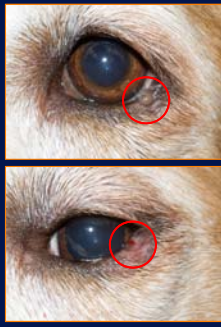
Treatment Options

- Surgical excision
- 10% recurrence

Eyelid Masses

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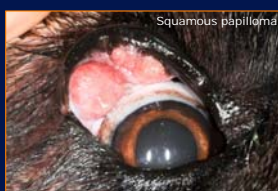
Treatment Options

- Debulk and cryotherapy
- 15% recurrence

Eyelid Masses

Common DDx

- Meibomian gland neoplasia
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- **Papilloma**
- Histiocytoma
- Melanoma
- Mast cell tumor
- Cutaneous lymphoma
- Impacted meibomian gland
 - Chalazion, styte



Squamous papilloma


Suggestive Findings

- Cauliflower-like appearance

Eyelid Masses

Common DDx


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 - Epithelioma
- **Papilloma**
- Histiocytoma
- Melanoma
- Mast cell tumor
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Squamous papilloma

Treatment Options


- Similar therapy & prognosis as meibomian gland tumors



Eyelid Masses

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- Histiocytoma
- Melanoma
- Mast cell tumor
- Cutaneous lymphoma
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Squamous papilloma
cryotherapy

Treatment Options

- Surgical resection or debulking with cryotherapy



Eyelid Masses

Common DDx

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- Mast cell tumor
- Cutaneous lymphoma
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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

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- Mast cell tumor
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Suggestive Findings


- Darkly pigmented, smooth
- Possible to be on lid margin



Eyelid Masses


Common DDX

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Treatment Options


- Surgical resection or cryo
- Prognosis is good (metastasis?)



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Suggestive Findings

- "Comes and goes"
- Mast cells on cytology






Photo courtesy of Dr. Anne



Eyelid Masses

Common DDx


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- **Mast cell tumor**
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Treatment Options

- Surgical resection is best
- Intralésional triamcinolone


- Exenteration with rotational skin graft
- 1 mg triamcinolone diluted in 1 mL 0.45% NaCl – may resorb
 - Triamcinolone causes apoptosis
 - Hypotonic saline causes lysis



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Suggestive Findings

- Locally extensive, irregular
- Often ulcerated

Diagnosis


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



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Treatment Options


- Surgery (reconstructive) if focal
- Medical if metastatic



Eyelid Masses


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Treatment Options

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




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3rd Eyelid Masses

Common DDx

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

- Signalment can help determine the diagnosis



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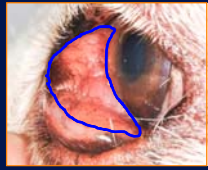
3rd Eyelid Masses

Common DDx

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

Suggestive Findings

- Older dogs
- Progressively growing mass
- Multilobular appearance
- Entire 3rd eyelid visible



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3rd Eyelid Masses

Common DDx


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


Treatment Options


- Complete surgical excision
- Prognosis good





3rd Eyelid Surgical Resection

1 

2 

3 

3rd eyelid adenoma






3rd Eyelid Masses

Common DDx

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

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




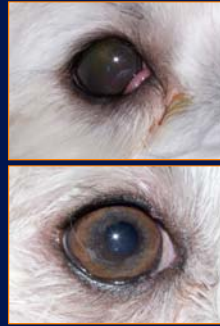
3rd Eyelid Masses

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- Adenocarcinoma
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- Everted cartilage
- Follicular hyperplasia

Treatment Options

- Pocket technique to replace
- Orbital rim tacking



3rd Eyelid Masses

Common DDx



- Adenoma
- Adenocarcinoma
- Prolapsed gland
- **• Everted cartilage**
- Follicular hyperplasia

Suggestive Findings

- Large breeds – Great Dane
- See smooth bend in cartilage

Treatment Options

- Monitor → purely cosmetic
- Thermocoagulation




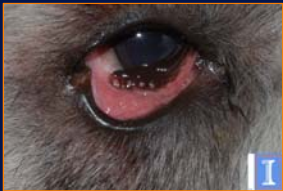
3rd Eyelid Masses

Common DDX

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


Suggestive Findings

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




3rd Eyelid Masses

- 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



3rd Eyelid Masses

- DO NOT remove the 3rd eyelid unless necessary



Prolapsed gland and deep stromal ulcers

Conjunctival flaps



Corneal & Scleral Masses

Common DDx

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



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

Treatment Options

- Debulk and cryotherapy
- Enucleation if problematic



Corneal & Scleral Masses

Common DDx



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

Suggestive Findings

- Very vascular

Treatment Options


- Resection with cryotherapy
- Enucleation (may be metastatic)



Corneal & Scleral Masses

Common DDX

- Limbal melanocytoma
- Hemangiosarcoma
- 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



Corneal & Scleral Masses


Common DDX

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



Suggestive Findings


- Smooth, raised, red mass
- Adjacent corneal edema



Corneal & Scleral Masses

Common DDX

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



Treatment Options

- Topical therapy
 - Cyclosporine or tacrolimus
 - 0.1% dexamethasone
- Systemic prednisone
 - Try topical first

Corneal & Scleral Masses

Common DDX

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

Suggestive Findings

- German Shepherds

Treatment Options

- Cyclosporine or tacrolimus



Corneal & Scleral Masses


Common DDX

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



Treatment Options

- Topical therapy
 - Cyclosporine or tacrolimus
 - Dexamethasone

Chronic entropion



4 weeks later



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



Uveal Masses

Common DDx

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

Suggestive Findings

- Darkly pigmented & raised
- Dyscoria



Uveal Masses

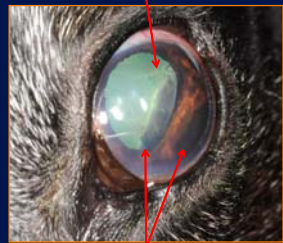
Common DDx

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


Treatment Options

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

Cataract formation from touching lens




Uveal melanoma contacting lens



Uveal Masses

Common DDx

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



Suggestive Findings


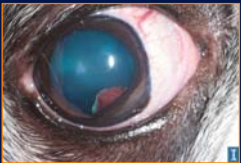
- Pink or red in color
- Located behind iris
- May be displacing lens



Uveal Masses


Common DDx

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



Treatment Options


- Enucleation (uveitis, glaucoma)
- Cryotherapy
- Unpredictable



Uveal Masses

Common DDx

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




Suggestive Findings

- Frequently have uveitis
- Lymphadenomegaly

Treatment Options


- Topical corticosteroids
- Systemic corticosteroids
- Systemic chemotherapy



Uveal Masses



Common DDx

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



Suggestive Findings


- Transilluminate easily
- Smooth and round
- Free-floating or narrow base



Uveal Masses

Common DDx

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




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 of 2° 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
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 - Hemangiosarcoma
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 - Primary Orbital Neoplasia
 - Any tissue origin
 - Abscess
 - Foreign body
 - Tooth root abscess



- Suggestive Findings**
 - Chronic & slowly progressive
 - Typically non-painful




3+ eyelid gland adenoma




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

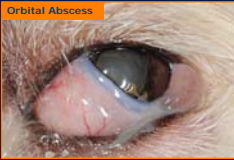
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- Metastatic Neoplasia
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 - Hemangiosarcoma
 - Lymphoma
- Primary Orbital Neoplasia
 - Any tissue origin
- Abscess
 - Foreign body
 - Tooth root abscess



Treatment Options

- Clavamox or Simplecef x 3-4 weeks

Orbital Abscess



2 weeks after therapy



Exophthalmos vs Buphthalmos

Exophthalmos

- Cause by an orbital mass
 - Abscess, neoplasia, mucocoele
- 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

Exophthalmos



Buphthalmos



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



<http://eyemicrobiology.upmc.com>



Feline Uveal Melanoma

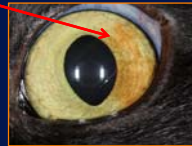
Suggestive Findings

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



Treatment Options

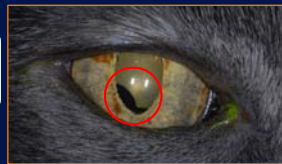
- Monitoring every 3-4 months
- Laser photocoagulation
- Enucleation
 - Especially with uveitis or 2^o glaucoma



Feline Uveal Cysts

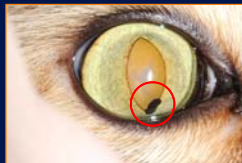
Suggestive Findings

- 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 2° glaucoma



QUESTIONS ?

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