Orbital meningioma in a dog
Don’t forget the basics!


http://www.tokresource.org/tok_classes/biobiobio/biome
nu/options_folder/E2_perception/ear.jpg
Pathology of the Eyes – Example

- 12 yr old, male, DSH cat
- Acute onset of blood in the eyes, bilaterally
- FeLV/FIV test negative
The conjunctiva are swollen and red with yellow viscous exudate. There is hemorrhage in the anterior chamber.

1. Conjunctivitis, mucopurulent, bilateral, marked, chronic
2. Hyphema, bilateral, moderate
Etiology?

Hyphema may be caused by trauma, severe uveitis, systemic hypertension, neoplasia, coagulopathies....

In this case – Uveal lymphoma was the underlying cause
Pathology of the Eyes: Case 1 - Terminology
Holstein cow

• This cow was electrocuted

Hyphema may be caused by trauma, severe uveitis, systemic hypertension, neoplasia, coagulopathies....

Hyphema = Hemorrhage in the anterior chamber
Pathology of the Eyes: Case 1 - Terminology

**Buphthalmos** = Enlargement of the eye

**Exophthalmos** = Protrusion of the eye

Exophthalmos is often caused by retrobulbar lesions:
- Tumour
- Abscess
- Hemorrhage

- Retrobulbar (and nasal) lymphoma
Pathology of the Eyes: Case 1 - Terminology

Harp Seal

- Bilateral cataracts
- Unilateral lens luxation and uveitis

Cataract = Opacity of the lens
Hypopyon = Exudate (fibrin and neutrophils) in the anterior chamber

Malignant Catarrhal Fever
Holstein cow

Notice deep vascularization of the cornea!

Keratitis = Inflammation of the cornea

Anterior Staphyloma = Protrusion of the iris through a defect in the cornea
Pathology of the Eyes – Case 2

- Adult, male, White tailed deer ‘jumped on’ hood of a truck
- Appeared dazed and possibly blind
- Animal was ‘put down’ and the head was sent to AVC
The cornea is thickened and cloudy. There is a dark red mass-like lesion in the vitreous chamber between the optic nerve and the lens.

**Morphologic Diagnosis**

1. Corneal Edema  
2. Intraocular hemorrhage
Etiology?

Gunshot trauma – lead pellets were found embedded in the periorcular tissue
In the eye from the dog a well-defined, firm, dark black mass occupies the vitreous chamber = uveal melanoma.

It can be difficult to differentiate between hemorrhage and melanoma of the eye grossly!
Pathology of the Eyes – Case 3

• 3 year old cow found dead with a chain wrapped around its neck – strangulation was the cause of death
• Cow had a previous history of ‘pink eye’
### Pathology of the Eyes – Case 3

<table>
<thead>
<tr>
<th>Description?</th>
<th>One eye is markedly enlarged and distorted with conical protrusion of the cornea. The cornea is opaque and brown with a roughened surface</th>
</tr>
</thead>
</table>
| Morphologic Diagnosis | 1. Buphthalmos, unilateral, marked, chronic *(keratoconus)*  
2. Keratitis, erosive, unilateral, marked, chronic |
Etiology?

Keratoconus is conical protrusion of the cornea – it may occur as a result of a hereditary defect of the cornea. **In this case it is more likely secondary to Infectious Keratoconjunctivitis (‘pink eye’)**
Etiology?

Infectious Keratoconjunctivitis (‘pink eye’): *Moraxella bovis* infection. Can be uni- or bilateral. Young cattle are affected most commonly. Exacerbated by dry dusty conditions, stress, sunlight, and irritants. Flies may serve as vectors spreading disease. Ulcers are often central.

Keratitis, erosive and ulcerative, severe, chronic, bilateral
Pathology of the Eyes – Case 4

- Adult cow.
- Mass present in the orbit of cow at slaughter.
- The head was submitted to AVC.

Normal side

Abnormal
### Description
The left eye is absent. Infiltrating and effacing the orbit is partially necrotic tan to black firm tissue.

### Morphologic Diagnosis
Malignant neoplasia of the orbit
- Top differential diagnoses
  - Squamous cell carcinoma
  - Lymphoma
Ocular SCC (“Cancer Eye”) is the most common tumour of cattle. Economic importance - affected animals are condemned at slaughter. Multifactorial etiology: heritability, sunlight, eyelid pigmentation are important.
Pathology of the Ears – Case 5

EARS

Dog

Pig
Pathology of the Ears – Case 5

EARS

• No history provided
• Typical presenting signs:
  • Headshaking
  • Scratching ears
  • Foul odour
  • Pain

Description?
The skin of both of the pinna is discoloured, thickened and corrugated and the lining of the external ear canal is markedly thickened causing narrowing of the canal.

Morphologic Diagnosis
Otitis externa, proliferative, bilateral, chronic, marked
Pathology of the Ears – Case 5

EARS

- No history provided
- Typical presenting signs:
  - Headshaking
  - Scratching ears
  - Foul odour
  - Pain

Etiology?

Otitis externa is common in dogs and is likely multifactorial:

- **Primary factors**: allergic skin disease, hypothyroidism, parasites (*Otodectes, Sarcoptes*), foreign bodies, tumours, seborrhea
- **Predisposing factors**: Narrow ear canals, excessive hair or cerumin glands in the canal, pendulous pinna
- **Perpetuating factors**: bacteria, yeast, otitis media, progressive hyperplastic changes
The right tympanic bulla is distended and contains inspissated yellow exudate.

**Morphologic Diagnosis:**

Otitis media, suppurative, chronic, severe, right ear
Pathology of the Ears – Case 5

EARS

- No history provided
- Typical presenting signs:
  - Head tilt
  - Head shaking
  - Aural discharge
  - +/- Circling

Etiology?

Usually bacterial - may result from extension from otitis externa (esp. cats and dogs) or entry via rupture of the tympanic membrane or the eustachian tube
EARS

Otitis interna/media, suppurative, bilateral, chronic, severe

- When lesions are extensive and involve the petrous temporal bone = **Otitis interna**
- These animals often have a pronounced head tilt and may circle

In calves, otitis media/interna and respiratory infections often occur concurrently; *Mycoplasma bovis* is the most common cause.
• Dairy farm: Several cats have upper respiratory tract infections
• One appears to have an ear infection → euthanized and submitted for necropsy
### Pathology of the Ears – Case 6

<table>
<thead>
<tr>
<th>Description?</th>
<th>A smooth pink to tan mass, measuring ~ 1 cm x 2 cm extends through the ear canal. It is firmly attached to the canal by a stalk.</th>
</tr>
</thead>
</table>
| Morphologic Diagnosis | Aural polyp!  
Differential diagnosis: Ceruminous gland neoplasia |
Pathology of the Ears – Case 6

Etiology?

- Aural polyps (nasopharyngeal polyps) are thought to arise from the eustachian tube and can project through the ear or into the pharynx/nasal passages.
- Likely result from chronic irritation.
- Clinical signs depend on the site and may include:
  - Head tilt, aural discharge
  - Change in phonation, dyspnea, nasal discharge
Questions??