Pathology of

Respiratory System – Part I – Upper

25th September 2012

Dr. Carlos Lopez-Mendez
Photo 1 & 2 same condition:

- Disease name? Etiology? Do you think there is bone deposition or resorption?
Answers

Disease name: Atrophic rhinitis

Histological features: Inflammation followed by conchal atrophy.

Etiology: Still Controversial; Infectious?, Nutritional (Vitamin D, Ca, P)? Genetic? Environmental (Humidity, temperature, etc.)? Current literature suggests a co-infection with toxigenic strains of *P. multocida* and *B. bronchiseptica*.

Additional information

- Non exudative & chronic process
- Deviation is towards the most affected side
- Suggested postmortem examination: Section at level of 1st 2nd premolar
• **Photo 1**: Do you think that the first specimen is an inflammatory or a neoplastic process?
**CASE 2 -**

**LAB – RESPIRATORY SYSTEM 2012 - FALL**

**Additional information**

- Can you make a **morphologic diagnosis** of this image?

- In a bovine, which viral agent should be your top differential?

---

**BOVINE**
**Answer:** Nasal septae: Rhinitis, fibrinonecrotizing and suppurative, diffuse, severe

Infectious Bovine rhinothacheitis (IBR) [Bovine Herpesvirus 1]
CASE 3 -

Photo 1 - Do you think it is a proliferative or inflammatory lesion? Do you know some possible differential diagnoses? Can you identify the problem?

Photo 2: Do you think it is a neoplasm? What would it be your top differential diagnosis in an ovine?
### Case 3 - Lab: Respiratory System 2012 - Fall

#### Answer

**Photo 1:**

- Neoplasm
- Nasopharyngeal Squamous cell Carcinoma would be a good differential, Nasal adenocarcinoma could be another good choice

**Photo 2:**

- Nasal adenocarcinoma

#### Additional Information

- **Endemic Nasal Carcinoma** (Endemic Ethmoidal Tumor) is a retroviral-induced neoplasia of cattle, sheep, goats
- Originates in the ethmoid conchae (turbinates)
- Present in many countries except Australia
- Typically affects adult animals.
- Non viral tumors are rare in small ruminants!

#### Etiology:

Retroviridae, orthoretrovirinae, betaretrovirus [ENTV Enzootic Nasal Tumor Virus]
Do you think it is a neoplastic or inflammatory process?
Answer

- Neoplasm.

It was a rare nasal tumor with Neuroendocrine differentiation. (Probable Neuroendocrine carcinoma, or olfactory neuroblastoma)

Two interesting facts!

- Primary neoplasms of the nasal cavity are rare in domestic animals.
- Dog and cats exhibit higher incidence than horses
- Tumors often metastatize to the brain
- Photo 1 – Can you identify the lesion? Do you think it is inflammatory or neoplastic?

- Photo 2: Can you suggest a morphologic diagnosis for this lesion?

**EQUINE**

4.5 year old
**CASE 5 -**

**Answer**

- **Photo 1**: Necrotizing guttural pouch mycosis. Guttural pouch mycosis (Aspergillus spp.): An important and occasionally fatal disease of horses. Sequel includes erosion of carotid artery, massive nasal bleeding and/or cerebral infarcts.

- **Photo 2**: Guttural Pouch Empyema: [An accumulation of pus in the equine guttural pouches common and important disease. It is caused by pyogenic bacteria such as *Streptococcus* spp.]

**Additional information**

- **Guttural pouches**: Ventral diverticula of the auditory (Eustachian) tubes in horses.

  **Severe**

Can you suggest a etiology for the following lesion? Can you suggest a qualifier for the inflammation?

<table>
<thead>
<tr>
<th>HORSE</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image_url" alt="Image" /></td>
</tr>
</tbody>
</table>

- *Aspergillus* sp. & Gutural pouch mycosis, **Fibrinonecrotic** inflammation
- Can you recognize this tissue? How would you morph the lesion? Disease name? Etiology?

**BOVINE**
Answer

Photo:

**Morphologic Diagnosis:** Larynx (arytenoids): Bilateral fibrinonecrotic laryngitis –

**Disease name:** Calf diphtheria (Necrotic laryngitis or oropharyngeal necrobacillosis also accepted)

**Etiology:** *Fusobacterium necrophorum*
**Photo 1:** What is your morphologic diagnosis? What would be your top differential for disease in cattle? What is the most likely etiology?
Answer

Trachea - Fibrinonecrotizing tracheitis, Diffuse and hemorrhagic.

Disease name: Infectious Bovine Rhinotracheitis (IBR)

Etiology: Bovine herpesvirus 1 (BoHV-1)
• Can you describe the lesion? Do you know the agent that causes that lesion?
Answer

- Multiple up to 1 cm submucosal nodules in the tracheal bifurcation
- *Oslerus (filaroides) osleri* (nematode)

Histologically: *O. osleri* causes minimal inflammatory reaction!