

# Listeriosis (“circling disease”)

Extended Version

**Classic case:** Silage-fed adult cow, head tilt, circling, asymmetric sensation loss on face

## Presentation:

### Signalment and History

- Adult cattle, sheep, goats, (possibly camelids)
  - **Indoors in winter with feeding of silage**
  - Extremely rare in horses
- Poultry and pet birds
- Human listeria outbreaks

### Clinical signs (mammals)

- **Head tilt**
- **Circling**
- Dullness
- **Sensory and motor dysfunction of trigeminal nerve**
  - **Asymmetric sensory loss on face**
  - **Weak jaw closure**
- Purulent ophthalmitis
- Exposure keratitis
- Isolation from rest of herd
- Ocular and nasal discharge
- Food remaining in mouth
- Bloat
- Marked somnolence
- Tetraparesis, ataxia
- Poor to absent palpebral reflexes
- Difficulty swallowing/poor gag reflex
- Tongue paresis
- Obtundation, semicoma, death

### Clinical signs (avian listeriosis)

- Often subclinical
- Older birds and poultry (septicemia)
  - Depression, lethargy
  - Sudden death
- Younger birds and poultry (chronic form)
  - Torticollis
  - Paresis/paralysis

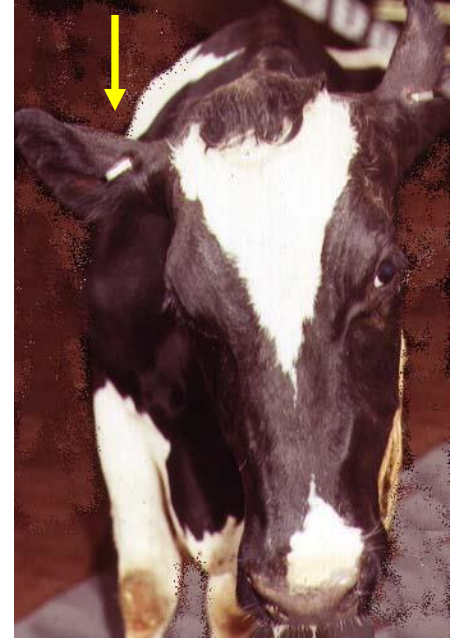
## DDX:

### Mammals

- Brainstem abscess, basilar empyema, otitis media/interna, Maedi-Visna, rabies, caprine arthritis-encephalitis, *Parelaphostrongylus tenuis*, scrapie

### Avian

- Colibacillosis, pasteurellosis, erysipelas, velogenic viscerotropic Newcastle disease



*Listeriosis in a Holstein.  
Note the head tilt and drooped ear*



*Listeriosis in an ataxic goat*

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## Test(s) of choice:

Mammals-Clinical signs and

- **Cerebrospinal fluid (CSF) analysis**
  - Mononuclear pleocytosis, Increased protein
  - **Culture is difficult and usually unsuccessful**
- Microabscesses in brain - Bacteria in lesions

Avian-Clinical signs and

- Necropsy lesions (think “necrosis”)
  - Necrosis on the myocardium (acute)
  - Increased pericardial fluid, pericarditis (acute)
  - Focal areas of necrosis and enlargement of internal organs (acute)
  - If chronic, may have NO gross lesions
- Microscopic lesions - Bacteria in lesions (remember, culture is difficult)



*Listeria monocytogenes*  
Image courtesy, CDC

## Rx of choice:

- **ABX: Penicillin, sulfonamides, tetracyclines** (avian, mammals), or **ampicillin** for **2-4 wks**
- Single dose of corticosteroids is controversial
- Relieve bloat
- **SUPPORT: Fluid therapy, dietary maintenance**

## Prognosis: Guarded to poor

- Poor if recumbent and/or can't swallow
- 50% if standing and can swallow

## Prevention:

**Complete anaerobic rendering of silage**

Identify and eliminate source of infection (avian)

## Pearls: *Listeria monocytogenes*

**Most common encephalitis in dairy cattle**

**Absence of forebrain sx:**

- Seizures, Aggressiveness
- Blindness

**Zoonotic concern**



*Listeriosis in a bull. Note the ear droop and ipsilateral ptosis, right side*

**Refs:** Large Animal Neurology, Mayhew, 2<sup>nd</sup> ed. p225-227, Merck Manual, 10<sup>th</sup> ed (online): Mammalian listeriosis and Avian listeriosis, Center for Food Security and Public Health and Iowa State University College of Veterinary Medicine: Listeriosis, Photos courtesy Dr. Lisle George