“Catahoula Cur Crisis”

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Signalment

- Owner had 14 Catahoula Cur hunting dogs
  - Six found dead in their pens
  - Postmortem examination of:
    - Dog A: 4-year-old, intact male
    - Dog B: 3-year-old, neutered male
History

• Puppy vaccinations given
• Adult vaccination status unknown
• Heartworm preventative given
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Additional clinical history post-submission:
- All 6 dogs recently in contact with feral hog
- Owner provides feral hog control to local farmers
L1509602: Dog A; Neck laceration
L1509603: Dog B; Severe unilateral facial edema and erythema
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L1509603: Dog B: Fleas and cutaneous erythema

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L1509602: Dog A Brainstem

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L1509602: Dog A
Brainstem

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L1509602: Dog A
Brainstem
Suspected INI

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L1509603: Dog B
Skin; Cheek

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Morphologic Diagnosis:

- **Dogs A&B:**
  Brainstem: Multifocal, mild to moderate, subacute encephalitis with neutrophils, perivascular lymphocytic cuffs and sporadic neuronal intranuclear inclusion bodies

- **Dog B:**
  Skin (left cheek): Focally extensive necrotizing dermatitis with subcutaneous edema
Etiology

Encephalitis consistent with pseudoraborabies (Mad itch, Aujeszky’s disease)
Suid herpesvirus 1 infection
Pseudorabies virus

- Order: Herpesvirales
- Family: Herpesviridae
- Genus: Varicellovirus
- Species: Suid herpesvirus 1 (SuHV1)
Pseudorabies (SHV-1):

- Reportable Disease
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- 2014: USA free of disease in commercial pigs
- Virus endemic in feral swine
- Reservoir host: Feral swine
- Susceptible hosts: Dogs, cats, cattle, sheep, goats and other wildlife

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- Dogs infected by ingestion of raw meat or biting infected swine
- No approved pseudorabies vaccine for dogs

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Feral Swine

- Louisiana feral swine population: ~ 500,000
- Rapid reproduction

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Feral Swine

• Louisiana feral swine population: ~ 500,000
• Rapid reproduction
• Impact:
  • Natural wildlife
  • Reduce natural forest regeneration
  • Increase erosion and shed coliform bacteria into waterways
  • Heavily impact agriculture
  • Carry infectious diseases
Control Methods

Current:

• Recreational hunting and trapping by private landowners
• Daylight and night time shooting
• Aerial gunning via helicopter

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Future:

• Toxicants
• Genetically-based contraception
Catahoula Curs

• Catahoula Curs trained to trap feral swine

• Offers service to local farmers

• Training starts: 6-7 months of age
  • Pens with trapped feral hogs

• Dogs bite and are bitten by feral swine

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Pathogenesis:

- Infected feral swine shedding virus
- Direct: Nose-to-nose or fecal-oral contact
- Indirect: Inhalation of aerosolized virus

Virus inhibits function of alveolar macrophages, reducing ability to destroy bacteria (secondary infections)

Viral replication occurs in nasal, pharyngeal or tonsillar epithelium and spreads via lymphatics to regional lymph nodes as well as via nervous tissue to the brain

Virus replicates preferentially in neurons of the pons and medulla

Latently infected swine may resume shedding of virus due to stress

Latent state can occur where virus is harbored in trigeminal nerve ganglia

Dogs become infected by ingestion of raw meat or biting infected swine

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Pathogenesis suspected in this case

Previously trapped feral hog → stress → recrudescence of viremia

Dog/feral swine contact
Being trained in pen
“Bite and bitten”

2-9 day virus incubation → acute death within 48 hours of onset of symptoms

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Canine clinical signs:

- Clinical signs:
  - Facial pruritus
  - Respiratory distress
  - Gastrointestinal signs
  - Neurological signs

- Some dogs die without showing any of typical symptoms
Common Histopathologic Findings

• Brainstem:
  • Non-suppurative encephalitis
  • Glial nodules
  • Rare intranuclear inclusion (neurons and astrocytes)
• Generalized hemorrhage
• Myocardial degeneration
• Myolysis
• Ganglioneuritis
• Hepatic necrosis (rare)
Case Summary:

- History + gross + histologic findings: suggestive of viral etiology
  - Specifically Pseudorabies

- Facial lesions suggestive of self-mutilation due to severe pruritus

- Suid herpesvirus not identified via virus isolation
  - Sampling artifact due to marked variation of brain lesions

- Immunohistochemical staining negative

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References:


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