Providencia rettgeri infection in 11 Juvenile American Alligators (Alligator mississippiensis)

N08-473
Clinical History

- Three years ago a large alligator farm with ~2000 animals experienced a large die-off of 800 3 to 4 foot alligators.

- Clinical signs included:
  - inappetance
  - white spots on tongue
  - side to side thrashing of head and tail
  - bleeding from nose and throat
Clinical History

- In late November 2008, eleven juvenile alligators began showing the same symptoms acutely.
- These were brought to UF for clinical workup, euthanasia and necropsy.

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Gross Findings

- Liver
  - Enhanced lobular pattern (7/11)
  - Diffuse hepatomegaly (2/11)
  - Multifocal petechiation of hepatic capsule (1/11)

- Lungs
  - Low to moderate numbers of petechiae distributed multifocally on pleural surface (6/11)

- Heart
  - Occasional 1-2mm poorly circumscribed confluent white foci on the ventricular epicardium (1/11)

- Brain
  - Mild to marked hemorrhage of meninges overlying rostral cerebellum and cranial cervical cord (3/11)

- Eyes
  - Mild to moderate amounts of white flocculent material within anterior chambers of both eyes (11/11)
Microscopic Findings - Spleen
Microscopic Findings - Spleen
Microscopic Findings – Gram stain
Microscopic Findings – Spleen (WP)
Microscopic Findings - Heart
Microscopic Findings - Heart
Microscopic Findings - Heart
Microscopic Findings - Eye
Microscopic Findings - Eye
Microscopic Findings - Eye
Additional Diagnostics

- The bacterium *Providencia rettgeri* was cultured from meninges, anterior chamber of the eyes, heart, liver, spleen, kidney and bone marrow of all eleven alligators.
Final Anatomic Diagnoses

1. Necrotizing splenitis, heterophilic, subacute, multifocal to coalescing, moderate to marked, with lymphocytolysis

2. Endocarditis and myocarditis, heterophilic, lymphoplasmacytic and histiocytic, subacute, multifocal, moderate, with intralesional bacilli, atrial and ventricular myocardium

3. Endophthalmitis, heterophilic and histiocytic, subacute, diffuse, moderate, bilateral with hypopyon
Additional Anatomic Diagnoses

1. Meningoencephalitis, heterophilic to histiocytic, subacute, multifocal, mild to moderate
2. Hepatitis, heterophilic, subacute, multifocal, mild to moderate, with individual cell necrosis
3. Interstitial pneumonia, heterophilic to lymphoplasmacytic, subacute, multifocal, mild to moderate
4. Glossitis, lymphoplasmacytic, subacute, multifocal, mild
Discussion

- *Providencia rettgeri* is an infrequent opportunistic pathogen of captive American alligators and crocodiles
- Has been shown to cause septicemia with heterophilic meningoencephalitis, pneumonia, hepatitis and splenitis
- In Australia this bacterium has been isolated from the brain, liver and in mixed cultures from the kidney and intestines of crocodile hatchlings
- Stress and sub-optimal water temperatures commonly precipitate infection
Thanks

- Dr Nanny Wenzlow
- Dr Brian Stacy
- Dr Lisa Farina
- Dr Ken Conley
- Dr Deb Mahapatra
- Other fellow UFL pathology residents
- UFVMC Histology lab staff

www.english.ufl.edu/.../alligator_baby.jpg

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Questions?
