Intranuclear Coccidiosis in a Red-footed Tortoise (Chelonoidis carbonaria)

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Signalment

- “Mr. T”, 16 year old, male, red-footed tortoise
History

- One of three in private collection
- Housed in outdoor enclosure
- 2 week history of lethargy and anorexia
- 2 day history of oral/perioral proliferative ulcers, depression, respiratory distress
- Died shortly after starting treatment
Ancillary Diagnostics

- **Abaxis Chemistry**
  - Hyperuricemia 5.7 mg/dL (0.8+-0.3)
  - Hypoalbuminemia <1.0 g/dL (1.7+-0.5)
  - Hypophosphatemia 0.8 mg/dL (3.6+-1.2)
  - Hypokalemia 4.1 mEq/L (5.3+-0.8)

- **PCR Negative for:**
  - Ranavirus
  - Herpesvirus
  - Adenovirus

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Gross Necropsy Findings

- Bilateral, red, shiny lesions on lateral aspect of the oral cavity

- Shallow red defect on dorsal mucosa of the tongue

- Mild to moderate amount of dark red gelatinous material in the distal primary bronchi and the proximal right lung
Morphological Diagnosis

- Intranuclear coccidiosis, chronic, multisystemic, minimal to severe, associated with:
  - Pneumonia, chronic, proliferative, marked.
  - Gastritis, lymphoplasmacytic and heterophilic, chronic, mild, with epithelial necrosis and hyperplasia.
  - Interstitial nephritis, lymphoplasmacytic and heterophilic, and tubular degeneration and necrosis, multifocal, mild.

- Etiology: Intranuclear coccidian parasite of chelonians
  - Initially described by Jacobson et al. in 1994
  - Isolated from several species of tortoises since its discovery
  - First case reported in red-footed tortoises
Intranuclear Coccidiosis

- Life cycle not well understood
- Commonly found multisystemically in epithelial cells and often associated with lymphocytic or lymphoplasmocytic inflammation and variable necrosis
- Antemortem qPCR diagnostic assay available
Quantitative Real-Time PCR

Coccidia-specific primers and probe
100ng DNA from blood

Coccidia copy number:
Shy Girl – 500
Mr. T – 200
Brave Girl – 30

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Intranuclear Coccidiosis – Clinical Signs

- Nonspecific
- Lethargy
- Anorexia
- Weakness
- Ocular and nasal mucoid discharge
- Ulcerations (oral & GI)
- Respiratory distress
- Diarrhea
- Emaciation
- Swollen erythematous vent
- Ascites

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References


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Questions?

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