Haemoproteus meleagridis in an Ocellated Turkey (Meleagris ocellata)
Case: N14-262

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Signalment

- Ocellated turkey (*Meleagris ocellata*)
- 3 years old
- Male
History

• Fully vaccinated turkey.
• April 24, 2014: Came from zoological facility.
• May 3, 2014: Exposed to 2 adult hens.
• May 12, 2014: Appeared slightly off with a decrease in feed consumption.
• Evening of May 13, 2014: Found dead in the enclosure.
Morphological Diagnoses

Protozoal megaloschizonts, acute, multifocal, marked, with muscle necrosis and minimal myositis, skeletal muscle; and acute, multifocal, mild to moderate, heart
• Gross lesions identified within the skeletal muscle were thought to be sarcocysts.

• Histological evaluation found characteristics most compatible with megaloschizonts of *Haemoproteus meleagrisidis*. 
• *H. meleagris* is a hemosporidian.
  – Found in wild and domestic turkeys throughout the range of the host.

• Hemosporidia- microscopic, intracellular parasitic protozoans.
  – Located within blood cells and tissues of avian hosts.
  – Closely related genera:
    • *Plasmodium* and *Leucocytozoon*.
  – Infections in highly susceptible individuals may result in death.
A. Infected insect #1 bites bird #1

- Infective sporozoites present in salivary glands of infected insect vector. Sporozoites gain entry at site of bite

B. Stages within bird

- Sporozoites invade tissues and reproduce as schizonts to produce numerous merozoites
- New vector (insect #2) feeds on bird and becomes infected
- Merozoites penetrate red blood cells and mature into infectious gametocytes
- Gametocytes mature, undergo sexual reproduction in midgut
- Oocysts become encapsulated on the outer midgut wall
- Oocysts rupture and sporozoites invade salivary gland

C. Stages within insect

- Infected insect #2 bites a different bird
• 87% prevalence of *H. meleagris*dis within wild turkeys in Florida.
  – Death resulting with high levels of infection.
• Experimental inoculation of domestic turkeys with a large dose led to death within 19-22 days.
• The turkey in this case was found dead 19 days after being transported into Florida.
Special thanks to:
Dr. Lisa Farina
My resident mates
The anatomic pathology faculty at the University of Florida

References:
Questions?