Necrotizing neuritis in an immunosuppressed Arab Horse

Case # 13-115867

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Signalment and initial presentation

- 4-year-old, female, entire Arab Horse

- Presentation - three week history of skin edema and anorexia

- Physical exam - Tachycardia, ventral edema and nasal discharge

- Lab results - Decreased PCV (8%), increased liver enzymes (SDH and AST), hypoproteinemia
Clinical Course

- TTW cytology – Neutrophilic inflammation cultured *Actinobacillus* and *Streptococcus* spp

- Bone marrow biopsy – Pure red cell aplasia, positive Coombs’ test

- Treatment - Azathioprine, dexamethasone, blood transfusion and antibiotics

- After 15 days of treatment – poor response to therapy and euthanized
Necropsy findings

- Major findings included:
  - Bronchopneumonia
  - Multifocal hepatitis with multinodular fibrosis
  - Red cell aplasia
  - Lymphadenitis with marked lymphoid depletion and multifocal histiocytic syncytial cells with intranuclear inclusion bodies

- Unusual lesion in the peripheral nerve sample
Histopathology findings - Nerve
Histopathology findings - Nerve

Tissue cysts - do not stain with anti-*Neospora* or *Sarcocystis* antibodies (IHC)
Toxoplasmosis

- *T. gondii* – a coccidian, obligatory intracellular and opportunistic parasite

- Definitive Host – Felidae family, Cat

- Intermediate host – Mammals

Tachyzoites

Tissue cyst

http://www.flickr.com/photos/pulmonary_pathology/5494279576/
Toxoplasmosis

- Acute infections are uncommon in adults
  - Commonly associated with immunosuppression

- In people –
  - AIDS patients – Toxoplastic encephalitis
  - Severe CD4+ T-lymphocyte depletion - high risk, CD4+ T cell count < 50 cells/μl

(Dubey J.P., and Jones J.L., (2008)
Toxoplasmosis

- In horses (literature)
  - High seroprevalence
  - No case of clinical toxoplasmosis reported in horses (Dubey, 2007)

- In this horse –
  - Incidental finding
  - Immunosuppressive therapy – azathioprine and dexamethasone
  - Severe decrease in the numbers of lymphocytes
    (203 cells/μl (1,500-5,000/μl))

- No lesions observed in multiple brain sections
Questions