

## **Fundamentals of Feline Neurology – Spinal Diseases**

Ronaldo Casimiro da Costa, DMV, MSc, PhD, DACVIM – Neurology  
Department of Veterinary Clinical Sciences  
College of Veterinary Medicine  
The Ohio State University

### **Objectives**

- Present some peculiarities of the neurological examination of cats
- Discuss some of the main causes of spinal cord diseases in cats

### **Peculiarities of Cats**

First of all - *Cats have minutes (sometimes seconds...)*

- Mental status
- Gait and posture
  - Creativity and patience!
- Cranial nerves
- Postural reactions
  - Tactile positioning – alternative to proprioceptive positioning in cats
- Spinal reflexes
  - Crossed extensor – develops quickly in cats
  - Cutaneous trunci reflex – some cats do not have it

### **Differentials for Cervical Ventroflexion in Cats**

- Hypokalemic myopathy
- Thiamine deficiency
- Myasthenia gravis
- Immune-mediated polymyositis
- Subacute/chronic organophosphate toxicity
- Polyneuropathies
- Hyperthyroidism
- Polymyopathies (hypematremic, hereditary - Burmese, Devon Rex)
- Cervical myelopathies – acute, subacute

### **Feline Infectious Peritonitis**

- FIP – 50% inflammatory CNS diseases
- Usually young cats (< 2 years)
- Systemic signs – fever, anorexia
- Neuro signs – usually multifocal– head – tilt, seizures
- Diagnosis
  - CBC– hyperglobulinemia, anemia, leukocytosis
  - CSF – neutrophilic pleocytosis, high protein
  - Serology or PCR CSF
- Treatment
  - New option – Antiviral- nucleoside GS-5734 (JFMS 2019)

### **Differential for Acute Paresis/Paralysis**

- Trauma
- Fibrocartilagenous embolic myelopathy
  - (ischemic myelopathy) – Older cats
- Intervertebral disc disease (extrusion) - – Older cats
- +/- Spinal neoplasia – Older cats
- Aortic thromboembolism - Older

### **Differentials for Chronic Paresis**

- Spinal Neoplasia
  - Lymphoma – young cats
  - Other tumors - older cats
- Meningomyelitis
  - FIP – young cats
- IVDD – Protrusion – older cats
- Polyneuropathies - older cats

### **Fibrocartilagenous Embolic Myelopathy**

- Overall quite similar to the canine disease
- Disease of older cats (median age 10 y)
- Typically non-progressive past 6 hours
- Most in the cervical spinal cord
- Etiological factor - trauma
- Lateralization less common – 58%
- Good outcome – 79% cases – no PT!

### **Intervertebral Disc Disease**

- Uncommon to rare in cats, compared to dogs
- Cats – 0.12% neurologic disease, dogs = 2.3%
- Extrusion or protrusion
- Signs – acute or chronic
- Mean age – 10 years (7-17 years)
- Most commonly affected discs?
- Diagnosis and treatment – same for dogs

### **Spinal Tumors**

- Lymphoma – 38.8%
- Osteosarcoma – 27%
- Glial tumors – 9%
- Meningioma – 7%

### **Lymphoma**

- Very important cause of neurologic signs cats
- Any age (6 m-17 y) – median 4 years
  - Bimodal distribution
  - 50% < 4 years
  - 25% > 11 years

- Affects mainly thoracic and LS regions
- Paraparesis and spinal pain – top signs
  - Symmetrical or asymmetrical signs
- Usually epidural masses in the vertebral canal

### **Lymphoma - 2**

- Most cats positive FeLV (55-90%)
- Typically multicentric disease
  - Kidney – 70% (41-100%)
  - Bone marrow – 50% (45-55%)
  - Liver – 35%
- Diagnosis
  - Cytology +
  - Blood smears – 5-13%, Bone marrow – 14-67%
  - CSF – 9-35%
- Treatment
  - COP + doxorubicin + lomustine

### **Other tumors**

- Meningiomas
  - Median age – 9 years
  - Most common region?
  - Thoracic – 59%
- Osteosarcoma
  - Median age – 8.3 years (3-13)
  - Poor survival – 3.5 months
- Glioma (astrocytoma – 53%)
  - Median age – 8 years
  - Most common location?
  - Cervical – 66%

### **Key Points**

- Progressive monoparesis (“lameness”) in cats, think on tumor (mainly lymphoma)!
- Acute monoparesis – think on trauma or vascular (aortic thromboembolism or fibrocartilaginous embolic myelopathy)

### **Summary**

- Cats have several peculiarities
- Consider the signalment when listing your differentials
  - Young cats – inflammatory or lymphoma
  - Older cats – IVDD, neoplasia, ischemic myelopathies (FCEM)
  - Any age - trauma