



BVNS neurotransmitter

Welcome to the latest edition of the BVNS Neurotransmitter. We are excited to continue to offer these case reports and hope they provide a valuable learning opportunity for our team and yours.



Misty, a 12-year-old Siamese, was referred by the Emergency Service of Regional Veterinary Referral Clinic in Springfield. Misty's primary care veterinarian was Dr. Lynn Gullledge at Kingstowne Cat Clinic.

CASE STUDY: MISTY

Presenting Complaint/History:

Misty, an indoor / outdoor cat, was discovered non-responsive with dilated pupils. She was rushed to the emergency service, resuscitated and presented to Dr. Bush 36 hours later for confusion, poor balance and behavior changes.

Exam Findings:

Misty was mildly confused, not feisty (unusual for her despite her angelic picture), side stepped when elevating her head while walking, had subtle right side placing deficits and dilated, non-responsive pupils with a normal retinal exam.

Localization / Assessment:

A right forebrain lesion was suspected based on behavior changes and postural deficit, however the side-stepping and postural deficits along with pupil changes also supported a midbrain lesion. A brain problem was certain, but its exact location and whether it was one mass lesion or multifocal disease was less clear. The disease was a sudden onset and mildly improving so an infarct (stroke) was suspected; however, lymphoma, infection and a meningioma were also suspected.

Diagnostic Findings:

MRI of the brain showed compression of the cerebellum indicating there was high brain pressure and brain herniation. There was increased T2 signal in the left piriform lobe consistent with a stroke, infection, or lymphoma. CSF analysis was performed to narrow the list of possible causes and demonstrated moderate inflammation with eosinophils, most consistent with parasitic infection.

Diagnosis:

The sudden onset of signs and recovery along with MRI and CSF changes in an indoor/outdoor cat presenting in the northeast during the fall is most consistent with Cuterebra infection.

Pathogenesis:

Botfly eggs stick to the fur of small rodents and the larvae develop under the skin. In the cat, an aberrant host, the



larvae can take an atypical course and migrate from the nose into the brain. Inflammation, necrosis and vasospasm / stroke are common histopathological findings in this disease. The goals of treatment are to kill the larvae and eliminate an anaphylactic and inflammatory response as well as treat any secondary bacterial infection that may have occurred from the migrating larvae.

Treatment:

1. Benadryl 4 mg/kg and then 2 hours later ivermectin on Day 1, Day 2 and then Day 4
2. Steroid therapy (we gave depo medrol 20 mg)
3. Baytril (antibiotic for bacterial infection from migrating parasite)

Outcome:

Cats that do recover from this disease typically have behavior changes such as poor eating, aggression, seizure and loss of house training. Remarkably, Misty has returned to herself with the exception of no longer biting when getting restrained for her medication.

Take home points:

1. Migrating Cuterebra larvae cause inflammation and stroke within the brain of indoor /outdoor cats in the fall generating rapid onset of clinical signs that can include seizure, behavior changes, coma, hypothermia and dilated pupils.
2. Signs can be recurrent and progressive due to continued larval migration. Treatment should be directed at killing the migrating larvae and treating the secondary inflammation and potential infection.
3. Many cats survive, however most are left with significant behavior changes and a diminished quality of life. Misty was lucky.