

# Natural Pet Care

COLD RIVER VETERINARY CENTER

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## Trust but verify the diagnosis

A senior mixed-breed dog had just been diagnosed with lymphoma. She had a chronic history of ear infections and had been treated over that time with 16 prescriptions for topical antibiotic-steroid-antifungal medications (Otomax, Animax, Tresaderm, et al.). A previous issue of *Natural Pet Care* discussed vestibular disease in dogs and the potential for ototoxicity such as deafness and vestibulitis from aminoglycoside antibiotics (gentamicin for example) in these products.

The steroids in these ear medications can find their way to cranial nerves and the brain as it is a short route through the ear canal. Steroidal anti-inflammatory drugs can damage nerves<sup>1,2</sup> and brain tissue as can chronic emotional stress or excess cortisol. It is small wonder then that veterinarians see dogs with pituitary tumors and Cushing's disease (hyperadrenocorticism) with a history of these medications. The lifetime dose of steroids in small dogs with ear disease is rarely quantified.

Getting back to my patient, the dog exhibited a spontaneous intense itching response on both sides of her mouth. She had a history of lip fold surgery as a young dog. Her itching was always attributed to "allergies" and an environmental allergen profile had confirmed that she had antibodies to many irritants found in or around her home. However with further discussion the owner shared that the dog scratches her face in any exciting or stressful situation such as the owner returning home or being restrained at the veterinary clinic. This is not a typical pattern for environmental allergies (atopy) and I suspected something else was going on. Furthermore, a food allergy test had not been done in the last 7 years though the owner had observed adverse reactions to certain foods such as chicken and wheat.

## Trust but verify the diagnosis (continued)

What is important in these cases is to provide qualified opinions such as "her itchy lips or muzzle are due to allergies" as the primary veterinarian did, yet not leave out other possible explanations or differential diagnoses such as:

- a. Infiltration of surgical scar tissue with sympathetic nerve fibers that are activated by stress hormones (the catecholamines)
- b. Recrudescence of trigeminal neuritis due to a Herpes virus infection (also may be stress related)
- c. Hyperesthesia or exaggerated sensation due to a local infection such as periodontal disease that spreads or is referred to the nerve and face
- d. Pain from tooth root or bone disease such as osteopenia, osteomyelitis, temporomandibular joint disease, or cancer
- e. Neuritis secondary to aminoglycoside toxicity from topical ear medications, a local adverse drug reaction from antiseptic washes or antibiotics for lip fold dermatitis

The point here is that all veterinarians in private practice may conduct their duties without a lot of oversight. They can offer opinions, but need to verify those opinions with objective measures whether it is a neurologic exam, radiographs, dental exam, or other diagnostic steps.

When all the data is in and a diagnosis is made that fits the history, signs, and objective findings, ask for a copy of the lab reports to learn more about your animal's condition and monitor their progress.

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1. J Investig Med. 2002 Nov;50(6):458-64. **Prednisone induces cognitive dysfunction, neuronal degeneration, and reactive gliosis in rats.** Ramos-Remus C, et al.
2. J Rheumatol. 2001 Nov;28(11):2529-34. **Prednisone induces anxiety and glial cerebral changes in rats.** Gonzalez-Perez O, et al.

## Case report: Scottie cramp

After writing up today's medical records I read a back issue of the Journal of the American Veterinary Medical Association from July 15, 2009 and came across a couple examples of interesting papers with conclusions that meet the criteria for *treatment* but offer little explanation of how to *prevent* disease. Veterinarians interested in preventing disease often are left having to figure that out for themselves compared to the availability of advice on treatments from drug companies, advertising and seminars that focus on medical or surgical interventions.

**Use of a selective serotonin reuptake inhibitor for treatment of episodes of hypertonia and kyphosis in a young adult Scottish Terrier.** Kelly M. Geiger and Lisa S. Klopp. *JAVMA*, Vol 235, No. 2, pp168 – 171.

In this report the authors describe a 2.5 year-old castrated male Scottish Terrier with episodes of kyphosis (hunched lumbar spine) and spasm in his hind legs that were worse with exercise or excitement. The clients were using a stroller to take the dog on long walks as the episodes of muscle spasms could occur after just 2 – 10 minutes of exercise. On the author's evaluation of the dog during exercise, within 15 seconds of starting to run his hind legs began to stiffen and he began to 'bunny-hop'.

A variety of tests were done and medications administered to see if the condition could be induced or suppressed. The current body of research had implicated the neurotransmitter serotonin as being transiently deficient (or unavailable) in the central nervous system (CNS) during exercise. The authors found that administration of a drug (parachlorophenylalanine) that blocks synthesis of serotonin increased the severity of signs, i.e. caused the muscles to be hypertonic and the spine to contract or arch upwards. Tryptophan, the amino acid precursor to serotonin, ameliorated these clinical signs. The authors concluded that a serotonin reuptake inhibitor, Fluoxetine (Prozac) was effective at treating episodes of Scottie cramp and was safer than controlled substances such as Diazepam (Valium).

What is missing from this report is a discussion of how to prevent this disorder or promote the patient's self-maintenance. Nutritional therapy for serotonin deficiency is safe and effective. Diagnosis of serotonin deficiency has been performed at CRVC through plasma and urine amino acid testing, or fecal serotonin measurements at human diagnostic labs for almost 10 years.

## Scottie cramp (continued)

I treat canine and feline patients with serotonin precursors such as 5-hydroxytryptophan (5-HTP), or at earlier stages of the synthesis pathway with these co-factors: magnesium, vitamin B6, niacinamide (vitamin B3), and vitamin C.

Using Prozac can maintain a pool of serotonin in the CNS but the dog still needs to synthesize the neurotransmitter, the primary deficiency. Failing to address this weakness is one reason why patients may not respond well to Prozac or relapse despite taking the medication. By employing nutritional support one avoids the expense and side effects of Prozac including potential adverse behavioral events if the drug is suddenly withdrawn. Furthermore, allowing the dog to produce more serotonin as he needs it helps avoid the on-again, off-again effect of drug clearance and helps meet the need for serotonin throughout the body. Not discussed in the article was why this dog was affected just in the caudal spine and pelvic limbs rather than other areas. Chiropractic evaluation may have provided an additional perspective on treating this dog's condition since misaligned vertebrae can lead to similar clinical syndromes in any breed of dog.

**Severe polymyositis and neuritis in a cat.** Adam A Ginman, et al. *JAVMA*, Vol 235, No. 2, pp 172 – 175.

This report describes a 4-year old domestic shorthair cat with a 1-week history of shifting leg lameness that progressed to weakness of all 4 legs. The cat had no prior history of medical problems, trauma, or exposure to toxins. It lived indoors and had been routinely vaccinated. A variety of tests were run and finding no infectious agent, cancer, or other etiology the clinicians treated with an immune-suppressive dose of prednisone and the cat fully recovered in 12 weeks.

The authors wrote: "Although an inciting cause of polymyositis and neuritis was not identified in the cat described here, it is possible that an infectious agent could have acted as a trigger for an autoimmune reaction or that occult neoplasia could become evident later in the course of the disease. The improvements of the cat with corticosteroid drug treatment and the relapse after dosage tapering are most consistent with the diagnosis of an immune-mediated disease." Curiously there was no mention of vaccines as a possible cause of polymyositis. If veterinarians don't look for vaccine side effects, they won't find any.