Coffee's Heated Skin: A Case of *Pemphigus foliaceus*

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Abstract

Coffee, a nine-year old female intact Labrador Retriever, presented to Auburn University Dermatology Service on March 21, 2019 extremely pruritic and painful. Skin cytologies showed numerous acantholytic keratinocytes. The results from the skin biopsies showed *Pemphigus foliaceus*. This is the most common autoimmune skin disease in dogs and cats. Coffee was treated with steroids, immunosuppressives, and bathing. At each recheck, she was improved and steroid doses are continuing to be decreased.

Keywords: Autoimmune, Canine, Case Study, Dermatology, *Pemphigus foliaceus*, Skin Disease

Text

9 year old, intact female, Chocolate Labrador Retriever presented for "extremely pruritic and sloughing skin" for 2 weeks. Pruritus scale: 9/10, painful Environment: indoor/outdoor, yard was recently treated by lawn care service Other pets: Boston Terrier on preventative, Cat not on

preventative Diet: Gravy Train, Alpo Medications: Apoquel, Benadryl, Cefpodoxime, Prednisone

Coffee presented to her referring veterinarian on March 6, 2019 for skin lesions on the face and focal area on her dorsum. She was heartworm negative. Coffee returned to her referring veterinarian on March 11, 2019 with new lesions on her mammary region and paws. Biopsies were performed and results indicated "severe eosinophilic and neutrophilic dermatitis with surface pyoderma". On March 20, 2019 Coffee visited her referring veterinarian again. Bloodwork showed increased liver enzyme activity, hyperglobulinemia, hyperglycemia, an inflammatory leukocytosis, and normal total T4. Skin scrape had no significant findings. Referral to Auburn University Dermatology Service.

Tests performed at first appointment: complete blood count, liver panel, cytologies, biopsies, abdominal ultrasound, dermatophyte culture, aerobic culture and susceptibility, and fungal culture. Skin Cytology: numerous acantholytic keratinocytes, neutrophils, and eosinophils. No bacterial or fungal organisms visualized. Acantholysis is the loss of intercellular connections resulting in the loss of cohesion between keratinocytes, the epidermal cells that produce keratin. The only definite way to diagnose *Pemphigus foliaceus* is biopsy.

Pemhigus foliaceus is the most common autoimmune skin disease in dogs and cats. It is usually spontaneous but can be drug induced or potentially secondary to a chronic inflammatory skin disease. This disease affects any age, sex, or breed but in dogs Akitas and Chow Chows may be predisposed. Primary lesions are superficial pustules and secondary lesions include superficial erosions, crusts, scales, epidermal collarettes, and alopecia. Diagnosis by ruling out other differentials. It causes the immune system to produce autoantibodies against a component of the

adhesion molecules on keratinocytes which causes the cells to detach from each other within the uppermost epidermal layers causing acantholysis.

For treatment, Coffee was admitted to the hospital for an eight-day stay. She was given fluid therapy and pain management the first night and oral prednisone. Thorughout her hospital stay, Coffee was given chlorinated Whirlpool baths followed by a medicated bath with Seba-Hex shampoo daily until discharge. We used the key components of treatment for *Pemhigus foliaceus*: Topical therapy, Conservative systemic therapy, Steroid therapy, Nonsteroidal immunosuppressive drugs, Antibiotics. The medications Coffee went home on were Clindamycin (antibiotic), Dexamethasone (steroid immunosuppressive dose), Azathioprine (immune suppressive), Seba-Hex shampoo (bath twice weekly), and Diluted Chlorhexidine (to loosen crusts).

Coffee's prognosis is fair to good. Remission is possible once immunosuppressive therapy is tapered and/or discontinued but lifelong management to stay in remission is usually required. Since *Pemphigus foliaceus* can be spontaneous or drug induced so you want to avoid anything that could re-trigger immune system. In Coffee's case, we think it was spontaneous but the "trigger" may have occurred around the time of her last heat cycle and was exacerbated by vaccines. We will likely recommend spaying her, but not until she is on lower doses of drugs or off of the steroid altogether.

At Coffee's first recheck on April 17, 2019, she was at a 5/10 on the pruritus scale. Areas affected: face, pinna, left shoulder, right hip, abdomen, right forelimb paw, perianal, perivulvar. Medications: Clindamycin 300mg BID, Gabapentin from rDVM, Azathioprine and Dexamethasone discontinued abruptly few days prior, owner ran out of these medications. Impression smears of pustules, a complete blood count and chemistry panel. Her paw pads were

intact and normal. Minimal hair regrowth. More energy doing well at home. A Complete Blood Count was performed as well as an ALK and ALP. Azathiaprine increases liver values. Her WBC decreased from the bloodwork we received from her referring veterinarian. Next recheck in three weeks.

At her most recent recheck on June 5, 2019, Coffee was a 1-2/10 on the pruritic scale and Pruritus scale: 1-2/10 Areas affected: nose, face, dorsum Medications: Dexamethasone 4 mg EOD, alternating days with Azathioprine 50 mg, Seba-Hex shampoo bath every 3 days. Skin improved but had diarrhea three days prior to visit. New puppy was diagnosed with hookworms and roundworms. Coffee's fecal float was negative. No new pustules! New dosing! Dexamethasone 2.5mg EOD, Azathioprine 50mg days not given Dex, Seba-Hex bath once a week.

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