

SKIN AND COAT DISORDERS IN DALMATIANS

Susanne A. Hughes, DVM
Study Group on Skin & Allergic Disorders
Research Committee, Dalmatian Club of America

By popular demand, the initial topic for consideration by the DCA Study Group on Skin & Allergic Disorders is that all-too-common and frustrating syndrome referred to by fanciers as "Dal crud." I will discuss this topic specifically as it relates to dogs being actively campaigned in conformation or obedience.

A typical scenario may be the following: the light of your life has a flawless coat while running in the backyard at home and swimming in scummy ponds. He may even tolerate a flea or two. He is groomed and shampooed on Thursday for the weekend shows. By Saturday, bumps start appearing, usually on the top of the dog's head and/or along his back. Left unchecked, the bumps spread and often become very itchy (pruritic). A significant proportion of these lesions, interestingly, may not itch but still progress as follows. Each bump is actually an inflamed hair follicle that oozes a bit of serum, which may be noticed only as it dries in the form of scabs. Within a few days, hair loss occurs at the site of each bump. Eventually the coat looks moth-eaten. Additionally, white hairs take on a pinkish-bronze cast at the sites of the original bumps, and now your hopes and vision of the judge nodding in your direction begin to fade. At this stage itching is variable.

What is the cause (etiology) of this skin disorder? How do we treat it? More importantly, how can we prevent it? Is this

what is referred to as the "Dalmatian Bronzing Syndrome"? Does the "Dalmatian Bronzing Syndrome" really exist as a diagnostic entity? The answers to most of these questions are relatively straightforward. Let us address these issues in sequence leaving the question of cause for last.

- The bumps are actually hive-like reactions that occur at individual hair follicles;
- When inflammation of the follicles ("folliculitis") occurs, we see secondary infection ("superficial pyoderma") by Staphylococcus intermedius, which is one of the normal bacterial flora found on all dogs' skin;
- By-products of bacterial life cycles can cause intense itching in the skin, aggravating the initial itchiness;
- Hair loss ("alopecia") is a result of folliculitis stopping the growth of hair;
- Remaining hairs are stained by pigments called porphyrins in the serum which ooze out during the inflammatory process.

The final and lasting result of all this is the "bronzed" appearance of the coat. The discolored hairs are permanently stained and little can be done to whiten a coat so

affected. Of course this bronzing occurs just as frequently in colored coats, but is not as apparent.

The central issue of this syndrome, however, remains to be addressed: Why do the hive-like reactions occur in the first place? The answers are many:

1) ALLERGY. A large majority of Dalmatians exhibiting these signs are allergic. Many scientific surveys statistically list our beloved breed as one of the most commonly represented allergic purebreds, based on repeatedly positive skin tests to assorted substances known to cause allergic reactions ("allergens"). These allergens may be inhaled as in the case of airborne pollens, molds, etc.; ingested as with food allergens; injected as with flea saliva; or merely contacted as with local irritants coming in contact with the skin.

2) STRESS. Add to allergy the physiological stress associated with travel, excitement, change in routine and diet (all that baiting!). Biologically, stress is associated with an increase in production of steroid hormones called glucocorticoids. Normally, glucocorticoids allow dogs to meet the special needs of stressful situations, but they may also have the unfortunate effect of decreasing the "barrier function" of normal canine skin. When inflammation already exists, the glucocorticoid response may permit bacteria, normally kept in check on the skin, to flourish.

3) HUMIDITY AND HEAT. Veterinary dermatologists consider changes in humidity and temperature also to be significant factors in the onset of these hive-like reactions. These changes may be associated with the ambient or skin environment, such as:

- climatic differences between home and the show site;
- drying of the skin;
- occlusion of pores in the skin by special grooming products.

It has been suggested that the non-itching form of this syndrome is more directly related to these environmental conditions than it is to allergies.

PREVENTION

Veterinary dermatologists are convinced that flea and inhalant allergies in dogs are hereditary. Certainly the best preventative medicine is to eliminate affected dogs from the breeding population. Some conscientious breeders have had great success in establishing lines with consistently good coats by simply avoiding the breeding of visibly affected dogs who exhibit chronically troublesome coats.

There is less agreement, on the other hand, about the hereditary nature of food allergies in dogs. As guardians of the Dalmatian breed, we must plan our breedings for general good health as carefully as we plan for that dynamite puppy that will knock 'em dead at the next DCA!

For those of us who have not quite accomplished coat-nirvana in our breeding programs, a little forethought and care may allow us to avert an impending coat disaster. A quick review of the situation allows us to enumerate potential problems and then formulate solutions:

1. We have a more or less allergic dog;

2. We groom this dog with whitening shampoos that strip natural protective oils from skin and coat;
3. We travel, exposing him to unfamiliar allergens and possibly fleas;
4. Change in daily routine produces physiological stress and subsequently a somewhat suppressed immune response;
5. Using bait alters the normal diet and may negatively affect those dogs who have a component of food allergy as part of this syndrome.

The following preventative measures have generally proven effective and safe with no long-term contraindications or negative side effects.

For the last few years veterinary dermatologists have been prescribing fatty acid supplementation (Derm Caps, EFA Caps, OM Caps, etc.) for those dogs shown to be allergic. Fatty acids act as immuno-modulators, anti-inflammatory agents, and are especially important in helping the body maintain the integrity of skin as a barrier to infectious agents. Other beneficial side effects include optimum hair growth and luster.

Although debate continues as to the ideal ratios of specific fatty acids, most dermatologists agree these supplements should contain a combination of vegetable and fish oils. Recent data suggests these supplements should be administered at two to three times the manufacturer's recommended dose. (Note that some dogs will develop diarrhea if given doses higher than the recommended one.) Another important note: the effects of fatty acid supplementation will not become apparent for four to eight weeks and so should be

part of long-term nutritional support. I recommend supplementation for the dog's entire show career, and in some cases, for its entire life. Fatty acids may not entirely prevent episodes of "the crud", but they allow the skin to function optimally under adverse circumstances.

Fatty acids have recently been shown in allergic dogs to act synergistically with antihistamines by helping to block the initial reaction to offending allergens. In several studies, dogs receiving both fatty acid supplements and antihistamines responded better with fewer, less severe bouts of itching and secondary skin infection than did those receiving either compound alone. Additionally, all dogs continuously receiving antihistamines responded better than those treated only when scratching was observed.

For breeders, this translates to a prevention protocol advocated by Carroll H. Weiss (Dalmatian fancier and Professor of Dermatology, U. of Miami School of Medicine), myself, other practitioners and veterinary dermatologists. Several days prior to an anticipated allergic challenge (dog show), begin preventative anti-histamine therapy and continue it until you return home.

Like Professor Weiss' suggestions, I usually choose to prescribe chlorpheniramine maleate (Chlor-Trimeton), 12 mg., two to three times daily. This is an inexpensive antihistamine available without a prescription that tends to produce less drowsiness than many other antihistamines. (For those dogs experiencing dullness after they receive their antihistamine, wait until after showing to dose them. Duration of activity is short, so this effect should be inapparent by the next morning.) Individual response to specific antihistamines is variable so do not despair if your

initial choice is ineffective. Other potentially effective choices include diphenhydramine (Benadryl), clemastine (Tavist), and hydroxyzine (Atarax).

The rest of the prevention protocol involves common sense management:

- Keep the Dalmatians free of fleas;
- Use hypoallergenic shampoos, alternating with antibacterial shampoos if necessary. Do not bathe them too frequently;
- Avoid baits known to induce allergic reactions. These foodstuffs will vary from dog to dog and may require extensive trial and error to identify. When possible use a single source protein bait such as all-turkey hot-dogs as opposed to Rollover.

Remember that no studies have been published which have examined large groups of allergic Dalmatians. Anecdotal evidence gathered from dermatologists in academic and referral centers is compatible with published statistics of allergic dogs:

- approximately 10% have food allergies
- 90 % have inhalant allergies.

TREATMENT

If your dog begins to "bump up" despite your best efforts or in lieu of preventative measures, then aggressive treatment is necessary to save some coat for the next couple of show circuits. Topical treatment with benzoyl peroxide (Oxydex, Pyoben) or chlorhexidine shampoos (Chlorhexiderm, Nolvasan) act to cleanse the skin, removing superficial bacteria. Under these circumstances, it may be necessary to bathe weekly, following with a hypoallergenic

oatmeal creme rinse to prevent excessive drying of the skin and compromise of the skin barrier.

Systemic antibiotics are always indicated in cases of folliculitis. Unfortunately, skin needs to be treated for three to four weeks even in uncomplicated cases. If response is not noted within seven to ten days of antibiotic therapy, reevaluation of the antibiotic being used is warranted. Antibiotics chosen as first line therapeutic agents should be those known to be effective against *Staphylococcus intermedius*. Both prescriptions by veterinarians, and response by bacteria to antibiotics, vary regionally but appropriate choices include: oxacillin, cephalixin, ormetaprim-sulfas and in some instances, amoxicillin with clavulanic acid. It is vitally important that appropriate treatment regimens are followed conscientiously.

For recurrent pyodermas that cannot be controlled by preventative measures outlined above, your veterinarian should recommend further workup to definitively rule in or out any allergies, endocrine disorders, seborrhea, Staphylococcal hypersensitivity or rarely, immunocompromise.

THE "DALMATIAN BRONZING SYNDROME"

I mentioned this "syndrome" earlier when discussing the bronze staining of white hairs by serum pigments called porphyrins. The bronzed Dal typically appears to have a broad stripe of pinkish - bronzed coat along the topline often including the head. Close examination of the hair shafts reveals staining from the skin to extend also to varying levels of the hair shafts. Early reports attempted to link this staining to other Dalmatian health problems including urinary urate crystals, dietary

allergies, protein intolerance, demodecosis, and sarcoptic mange, and to call the collection of disorders, the "Dalmatian Bronzing Syndrome".

Dermatologists are skeptical that this is a syndrome definitely associated with these other maladies or unique to Dalmatians. Most believe instead that it is the natural result of follicular inflammation described previously. Obviously, white-coated breeds will exhibit the staining most dramatically.

Despite this skepticism in the veterinary community, a new study is getting underway at North Carolina State University College of Veterinary Medicine examining the "red hair syndrome" of many breeds. This is a problem reported more frequently in Europe than the United States but closely parallels what has been referred to as the "Dalmatian Bronzing Syndrome" here. Researchers will be studying the structure of hair shafts by electron microscopy.

Anyone interested in participating by supplying hairs for examination should contact me for more information:

Susanne A. Hughes, DVM
3013 Ridge Road
Durham, North Carolina 27705

Tel. (919) 489-1367
Fax (919) 489-5838
email: qlag19a@prodigy.com

Copyright © Dalmatian Club of America, Inc., 1995.
All rights reserved.