

# **The Mastiff and Skin Problems**

## **by Robin M. Smith, DVM**

I was asked to write an article about common skin problems in mastiffs and while I do encounter skin problems frequently in mastiffs, I must say it is not one of my favorite subjects. The primary reason I do not like dermatology or skin problems is because by the time I usually see the Mastiff in question the dog has been treated with a variety of different medications and ointments and the dog is no better and the owners are frustrated. What I plan to do is to describe what I commonly see in mastiffs and tell you how I try and diagnose the problem and treat this problem. Please, as I have always said, before doing anything or giving your dogs any medication, consult with your veterinarian and do not try to treat your Mastiff on your own.

As I stated, I frequently encounter very frustrated owners of mastiffs who have been to their veterinarians with skin problems. Over the years, my experience with mastiffs and their skin problems has taught me to treat each dog individually and how to rule out underlying problems before treating the disease. I must say that I have been very successful in treating Mastiff skin problems. The dog will not get better overnight but with proper diagnostics and therapy I can get most skin problems at least under control in 4-8 weeks.

As I go through the diagnosis and treatment of Mastiff skin problems, you must realize that there are thousands of skin conditions that are known. All I am going to talk about are the most common that I have seen relating ONLY to the Mastiff. This, in no way, means that the Mastiff cannot get other skin conditions and again, only your veterinarian will be able to thoroughly diagnose and treat your pet.

First, a general overview of the skin as an organ and its function is imperative to the understanding of the problems associated with the skin. The general function of the skin is that it maintains an effective, flexible barrier to the loss of water, electrolytes and macromolecules. It provides protection from physical, chemical and microbiological injury. The skin helps to preserve body heat. It is also a sense organ for touch, temperature, pain and itch. The skin is also a secretory organ. And lastly, Vitamin D is produced in the skin via solar radiation.

The skin is made up of the epidermis, the outer layer, and the dermis or inner layer which nourishes the epidermis and supports it.

The normal skin defenses are the hair, the epidermal layer, the sebum or oily secretions that have antibacterial properties, the skins immunoglobulins and the normal skin bacterial flora.

Note, that I said NORMAL flora. All skin has bacteria presiding on it. These include Staphylococcus and other species. The problem arises when there is a break in the barrier of the skin allowing access of these bacteria to deeper layers or allowing accumulation of bacteria to occur.

The MOST common skin condition that I see in the Mastiff is pyoderma, or cutaneous bacterial infection. The bacteria usually involved is Staphylococcus intermedius.. However, other bacteria can also be found. Staphylococcus intermedius is probably a normal inhabitant of the dogs mucous membranes and transiently colonizes the skin without necessarily causing disease unless

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some other factor leads to impairment of the skins' resistance. Most dog skin is rather resistant to bacterial disease, and pyoderma is usually regarded as a secondary phenomenon.

Mastiffs with pyoderma exhibit a range of lesions. Pustules are usually the hallmark of the disease but usually not seen since they are so fragile and burst before we recognize them. The first lesions are usually papules that will sometimes form pustules if seen. These are found usually in the groin, ventral abdomen, and axilla commonly. In some cases the dorsal trunk and neck are involved and patchy hair loss can be seen at these sites. By the time I see some of these cases, there are not many pustules or papules. It is in the more chronic state. I see scaling and epidermal collarette formation (round lesions that sometimes are mistaken for ringworm lesions), crusts, and extensive hair loss.

The dogs are often pruritic or itchy. This is probably due to the production of inflammatory toxins and enzymes by the bacteria.

There are also different classifications of pyoderma such as superficial and deep. I will not discuss these here.

I will try and describe a typical Mastiff pyoderma (if there is one). There is usually small black crusty lesions which seem to be more on the back and back of the neck. You can easily pull the hair out and the dog will start scratching when you run your hands through the back hair. The hair will feel oily and dirty. There may also be a nasty smell associated with this skin problem. Sometimes there are also ring type crusty lesions in the groin and ventral abdomen. All in all, the dog is miserable and you are too because it is nasty just petting them. Another common finding in mastiffs is a hair thinning skin darkening on the flanks of the dogs body and it is usually on both sides.

I try to get a good history as to when the symptoms first appeared, whether or not they are itchy and what has been done so far to treat them. I also like to know environmental conditions, what the dog eats and if the condition is seasonal. While I have encountered allergic type skin conditions in mastiffs, I have not found it to be very common as it is in other breeds.

With history in hand, I begin my diagnostics. Again, you must understand that I am usually the last resort for some of these dogs. I will obtain a full blood profile, a CBC and a chemistry panel and a thyroid panel sent to Michigan State. I will scrape all of the dogs to make sure that we are not dealing with an underlying mite or parasitic infection. I will scrape several areas. I will also do a fungal culture at this time. With the bloodwork, I am looking for any indication of a systemic problem since many diseases manifest themselves through skin lesions. I also do a urinalysis at this time. Most of the cases I see have negative skin scraping and their bloodwork is normal although I have encountered systemic infections in dogs that had severe pyodermas. It takes a few days to get the thyroid test results. I will also do a culture and sensitivity of the skin lesions. Hopefully, the dogs have been off of any systemic antibiotics for a week or so before. AND I examine the skin lesions under the microscope. I try to find a new pustule or one that hasn't been broken and lance it with a needle and then touch a microscope slide to it several times and let it dry and stain it. This technique using different types of stains can give a rapid

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interpretation of the type(s) of bacteria present and assessment of the inflammatory response. For the culture, I also try and use a pustule that is not open and lance it with a needle and swab the contents onto a sterile aerobic culture swab and send to the lab.

The most common underlying condition I recognize in mastiffs with skin infections that do not resolve is hypothyroidism. This is an underproduction of the thyroid hormone necessary for proper metabolism. I know that many of you are going to say, "Isn't that hereditary?" Yes, and no. There are two types of conditions that cause decreased thyroid levels. One is where there is an immune destruction of the thyroid tissue which has a hereditary mode of transmission and the other is where they thyroid gland is replaced with connective tissue and is not hereditary. Both occur with the same frequency or so the literature states. That is why I send the thyroid test to Michigan State because the interpretation will tell you if there are autoantibodies present in high enough numbers to be causing a self destruction of the gland and therefore being hereditary.

How does low thyroid cause skin problems? Hormones regulate physiologic processes in the body. Excesses or deficiencies result in changes in morphology or function of the skin. Cutaneous changes resulting from thyroid imbalances occur as a result of affecting lipid or fat metabolism in the skin, thereby affecting the permeability. The skin has a very high metabolic rate. In other words, there are new cells formed and old ones lost very rapidly. If you think about a person who is undergoing chemotherapy, you will be able to understand this high rate of turnover. Chemotherapy agents are targeted to affect very fast growing cells, such as cancer cells. But, as you can see from the side effects, other cells are affected also and they are the ones that have a high metabolic rate. You see hair loss and upset stomachs and gastrointestinal signs as diarrhea. That is because the skin and hair and gastrointestinal tract cells have a high turnover rate. I give you this example to demonstrate the higher amount of energy and metabolism that is necessary to maintain the skin. I also see our mastiffs as giant breed dogs needing a higher metabolism to maintain themselves as compared to a poodle. I say this because it will follow with what I am going to say on the thyroid and the Mastiff. I mentioned that hypothyroidism is a common underlying condition causing skin problems in our mastiffs. BUT, I must follow this with saying that in many of the mastiffs I treat with skin conditions, their thyroid levels are within the normal ranges but usually low normal ranges. But with the number of mastiffs I have supplemented with thyroid medication and appropriate other therapy that had low normal thyroid levels that responded to therapy, I have to suspect that perhaps we need to look at these ranges a little more intensely when dealing with giant breeds. I am not advocating if your dog has skin problems to just put them on thyroid medication. Again, I believe that this is a decision that should be made with your veterinarian and with a thorough workup to rule out other causes.

The effective treatment of pyoderma with antibiotics depends on the use of the correct drug at the correct dose for a sufficiently long duration. Bacterial culture and sensitivity of skin lesions is controversial. But because the cases I see are usually chronic, I think it is very useful and it helps me with my drug selection. In most first time cases, veterinarians choose a drug that would be effective in most pyodermas, such as Cephalexin or sulfonamides. Neither of these is all that expensive. I will usually not use sulfa drugs because of certain reactions that have been reported in the use of these drugs and sulfa drugs can potentiate hypothyroidism by lowering thyroid levels even further. But again, I am usually working with the chronic case and there are a lot of secondary bacterial invaders in the skin. I still start on Cephalexin at 10 mg./lb twice a day until I

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get the culture back. My concern is that a lot of these skin problems have secondary Pseudomonas infections which are very tough to get rid of. Of the oral drugs that we use in veterinary medicine, only Baytril or enrofloxacin, will work on Pseudomonas. If the owners do not want to do a culture and sensitivity for some reason, I will use this to start with. The bottle dose will not get the Pseudomonas. You must give it at at least 7 mg/kg up to 10 mg./kg twice a day. I have used 10 mg/kg once a day also. In our mastiffs, that is VERY expensive. BUT, it works. Again, that is why the importance of a culture and sensitivity. If I do not get a Pseudomonas back, I can use other drugs instead of the expensive baytril.

While awaiting the thyroid profile, I will start the dog on soloxine at .1 mg/10 lbs and divide this dose into two. For example, I will give a 140 lb. Mastiff a .7 mg soloxine twice a day.

So, the dogs are on soloxine and the cephalixin pending the thyroid results and culture and sensitivity results. I sometimes use topical shampoos. The most common I use is benzoyl peroxide and chlorhexadine. Benzoyl peroxide is a potent bactericidal agent. It helps to restore normal surface microenvironment. It can be potentially irritating and drying, though, so a concurrent conditioner should also be used. Chlorhexadine is also bactericidal and highly effective. It is less irritating than the benzoyl peroxide. One good effect of shampoos is that they will remove the crusts, scales and other surface debris.

This treatment is continued for at least one week past the resolution of the problem. This can be as short as 2 weeks to as long as 2 months. I usually recommend keeping the dog on a low level thyroid supplementation for life with routine thyroid checks to make sure the level is not too high. Sometimes, the dogs can even be weaned off of thyroid supplementation.

One thing I have not touched on yet is the itching that is present with these conditions. I will usually use a drug named hydroxyzine (atarax). I try to stay away from all steroids because of the secondary effects these drugs can have on other body systems. In very tough cases though, I have had to use steroid, very judiciously, and I try to get them off of the drug as soon as possible.

Again, I must remind you that this treatment of Mastiff pyoderma is a regimen I have found to work in a great number of mastiffs I have consulted on. It by no means implies that there are not other treatment regimens and your veterinarian will be the best one to decide with you.

As I stated at the beginning, there are thousands of skin problems in dogs. Besides the commonly found Parasitic conditions, i.e. fleas, ticks, mange and fungal conditions, the next most common problem that is found is allergy problems. One could write a whole book on allergies and there are specialists that deal only with allergic conditions of the skin. Because this issue is so extensive, I will not go in depth here.. Food allergy dermatitis and atopic dermatitis are the most common type of allergies seen in the Mastiff. I have encountered one skin condition in a couple of mastiffs where they were allergic to themselves. Actually, they were allergic to their own bacterial flora. I had to culture their skin lesions and send the culture to a laboratory that made a vaccine from the dogs own bacterial flora and we used this to desensitize the dog. In both cases, it worked great. The underlying condition may be an immune related problem but is difficult to prove.

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Another common problem with mastiffs is ear infections or otitis. We have all seen the Mastiff that has the greasy nasty smelling ear. I again, usually see these after the dog has had several different treatment regimens and they have failed. Most of these infections now have multiple organisms growing in those ears and take quite a long time to clear up. I always get a culture and sensitivity. I always look at a slide of the ear wax under the scope to identify yeast or *Malassezia* organisms. Depending on what the culture comes back with and whether there were yeasts then I will treat appropriately. Most of the time, systemic antibiotics are needed. Also on occasions where the exudate in the ear is so bad, I may suggest sedation and ear cleaning. Again, some of these can be linked to an underlying disease process like hypothyroidism. I routinely tell clients to clean their mastiffs ears out with a type of swimmers ear solution made with 3 parts alcohol and 1 part white vinegar and use it 2-3 times a week. This solution creates an acid environment that keeps yeasts and most bacteria from growing.

I hope I have enlightened you on some of the common problems I see in the Mastiff breed in regards to the skin. The skin can be so frustrating to work with but when you do find the answer, it is so rewarding both for you and for your Mastiff.