



O A K B A Y A N I M A L H O S P I T A L

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CANINE DEMODECTIC MANGE

Mange is a parasitic skin disease caused by microscopic mites. Two different mange mites cause skin disease in dogs. One lives just under the surface of the skin, while the other resides in the hair follicles. Although both mites share some similar characteristics, there are also important differences. It is important not to confuse the two types of mange because they have different causes, treatments, and prognoses.

What causes demodectic mange?

Demodectic mange, sometimes just called "demodex", is the most common form of mange in dogs. It is caused by the demodectic mange mite, a parasite which lives in the hair follicles of affected dogs. Under the microscope, this mite appears shaped like an alligator with eight legs. All dogs (and many humans) have a few of these mites on their skin. As long as the body's immune system is functioning, these mites cause no harm.

Demodectic mange most often occurs when a dog has an immature immune system, allowing the mites to grow rapidly. Therefore, this disease occurs primarily in dogs less than 12-18 months of age. In most cases, as a dog matures, the immune system also matures. Adult dogs that have the disease usually have defective immune systems.

Does this mean that demodectic mange is not contagious?

Yes. Since the mite is found on virtually all dogs, exposure of a normal dog to one with demodectic mange is not dangerous.

Why doesn't the immune system mature correctly in some dogs?

Development of the immune system is under genetic control. Thus, an affected dog usually comes from a litter containing other affected puppies. Owners of littermates should be put on the alert to watch for it. Because the disease is due to a genetic defect, affected dogs should not be bred. Also, parents of the affected dog should not be bred again.

What does demodectic mange do to the dog?

Surprisingly, a dog with demodectic mange does not itch severely, even though it loses hair in patches. Areas of bare skin will be seen. The hair loss usually begins on the face, especially around the eyes. When there are only a few patches of hair loss, it is termed **localized** demodectic mange. If the disease spreads to many areas of the skin, it becomes **generalized** demodectic mange.

How is demodectic mange treated?

The localized form is usually treated with topical medication. The generalized form requires shampoo therapy and a special dip or oral medication. Shampooing with special cleansing shampoos helps to flush out the hair follicles prior to dipping. Dipping is described below. For dogs with generalized demodectic mange, secondary skin infections may

represent a complicating factor requiring antibiotic therapy. Dogs with skin infections have very red, inflamed skin. This is the source of the term "red mange."

I heard that there is a drug that can be given orally for demodectic mange? Is that true?

Yes, with some reservations. Ivermectin is a drug that is used for prevention of heartworms. It is also used for certain parasites on cattle. The cattle preparation has been used orally for demodectic mange in dogs. In many dogs it is very successful and is less expensive to use than some of the newer topical products. However, it is a very strong drug that can cause severe side-effects, including death, if it is not dosed properly. It is not approved for use in dogs, so we would only consider using it as long as you are willing to accept liability for adverse effects.

What is the prognosis for my dog?

Treatment of the localized form is generally successful. Treatment of the generalized form is also usually successful. However, if the immune system is defective, neither the mites nor the infection may respond to treatment.

Following successful treatment, is it likely to recur?

Because the immune system does not mature until 12-18 months of age, a dog with demodectic mange may have relapses until that age. It is important for retreatment to begin promptly to minimize the possibility of developing uncontrollable problems. Demodectic mange may also occur in very old dogs because function of the immune system often declines with age. Dogs who have immune suppression due to illness or medication are also candidates for demodectic mange.

The dip commonly used for demodectic mange contains the insecticide amitraz. Its use requires some caution because it is a strong insecticide that can have some side-effects to your dog *and to you* if it is not used properly. Your dog may experience vomiting and sedation for 24-36 hours following each application. If so, those problems will usually be self-limiting. If this occurs, the dip should be diluted with 25% more water the next time it is used. Since each dipping results in the development of tolerance to the dip, your dog is less likely to have side-effects with each subsequent treatment. Your dog should be dipped three times at seven day intervals, then examined for the presence of live mites or mite eggs. Further treatment will be determined by the results. If you do the dipping yourself, be sure to wear rubber gloves to prevent getting it on your hands.

Instructions for your dog are noted:

- 1) ___ Apply the dispensed ointment to the areas of hair loss. Do not get it in your dog's eyes. Apply it once daily for 10-14 days. At that time, the dog should be re-examined to decide if further treatment is needed.
- 2) ___ Give ___ ml of the oral insecticide once daily. This needs to be continued for 2-4 weeks past apparent recovery. Report any adverse side-effects including loss of appetite and vomiting.
- 3) ___ Bathe your dog with the recommended medicated shampoo, then rinse the shampoo. Next, slowly pour amitraz dip over the entire body. This should be done three times at seven day intervals.

Mix one bottle of amitraz with two gallons of water. Once the bottle is opened, amitraz deteriorates rapidly, even if not diluted. Therefore, unused dip cannot be used later. Wear rubber gloves while handling the dip; wash your hands and arms with soap and water after treatment of your dog. Do not rinse the dip off your dog; allow it to air dry. A hair dryer may be used if the temperature is cool.

If vomiting or sedation occurs within 24-36 hours after dipping, dilute the dip with 25% more water (2½ gallons instead of 2) the next time. These side-effects should resolve without treatment.

- 4) ___ After the third dipping, we should examine your dog for the presence of live mites or mite eggs. The need for further treatment will be discussed. Some dogs require up to 12-15 dippings before no live mites or eggs are present. We should examine your dog after every third dip.
- 5) ___ Administer the dispensed antibiotics according to the label. When the prescription is completed, your dog should be examined to determine if further antibiotic treatment is needed.

- 6) ____ For lesions on the feet, mix 1 cc of amitraz dip (straight from the bottle) with 1 oz of propylene glycol. Apply this mixture to the feet 2-3 times per week. It must be mixed fresh each week. If the feet are affected, they will often be the last part of the body to heal. You should be able to obtain propylene glycol at your pharmacy. Remember to wear gloves when applying dip to your dog's feet.
- 7) ____ At the first sign of recurrence of this disease, we should see your dog again to determine what treatment is needed. This may happen until it is 12-18 months old.
- 8) ____ We will apply the amitraz dip to your dog. Return the dog in ____ days for the next treatment.
- 9) ____ Return your dog in ____ days to have it examined for the presence of mites.