Treatment and management of canine mange in a shelter

Dr. Roberts answers questions about managing canine mange, both scabies and demodex, in a shelter.

Question:

We just received a dog who appears to have mange. She is about 10 weeks old and she is very itchy and her skin is pink and warm to the touch. Our vet diagnosed sarcoptic mange and started her on Credelio (lotilaner) and an antibiotic.

Our plan was to place her in foster, but our vet is concerned someone in the foster household might contract the illness, so in the meantime the puppy will stay in a kennel in the shelter. However, because she is so young, it's a priority for us to get her into foster sooner rather than later.

Can you please advise on the best course of action? How do we counsel potential fosters/adopters? How much of a concern is it for other animals and humans in the household? Also, what are best practices for handling dogs with sarcoptic mange in the shelter setting? Do they need to be handled last? Do staff need to wear gloves/gowns? Do they need separate leashes/laundry protocols? At what point can they safely go into playgroups with other dogs? We find a lot of conflicting information online.

Our vet's recommendation is separate housing not adjacent to other dogs, a designated leash, no play groups, volunteers can't walk them until last (and volunteers are afraid they will infect their animals at home), and adopters are apprehensive for fear of spreading the disease too (they are also asked to wear gloves which REALLY turns them off). Should we recommend that they treat their other animal at home before adoption? If so, with what? Adult dogs only in the adopter's household?

Would your recommendations be the same for demodex? We run into demodex frequently and we struggle with our protocols and communication for demodicosis as well.

Answer:

Thank you very much for your thoughtful questions! We understand how frustrating sarcoptic mange can be in the shelter and we hope you find our answers helpful.

Sarcoptic mange or scabies is caused by an infestation of the mite, *Sarcoptes scabiei var canis* (canine variant). Challenges in management arise from the fact that it is highly contagious among dogs. Challenges in treatment can occur due to secondary bacterial infection and intense pruritus (itchiness) that can affect quality of life. Our approach to managing sarcoptic mange in the shelter includes the following:

- Treatment
- Separation
- Adoption

Treatment

There are multiple medications effective against scabies. The medications labelled for this use are Revolution® (selamectin) and Advantage multi® (imidacloprid and moxidectin). Frontline® (fipronil) and Seresto® collars (imidacloprid and flumethrin) are labelled as aids in the control and treatment of scabies. Off label isoxazoline insecticides including NexGard® (afoxolaner), Bravecto® (fluralaner), Simparica® (sarolaner) and Credelio® (lotilaner), as well as heartworm preventives with milbemycin oxime (e.g. Interceptor®), have demonstrated efficacy against scabies when used at the labelled dose. High dose oral ivermectin is not recommended; it is associated with treatment failure and toxicity for sensitive dogs.

The mite's life cycle completes in 3 weeks, from adult to egg-producing adult, so using most products for 30-60 days is recommended to ensure each generation of hatching mites is killed. A single dose is expected to kill existing adults and mites are expected to die very quickly after hatching if product application is consistent and repeated per its label. Your veterinarian can recommend treatment length depending on which medication is used.

Lime sulfur is primarily a historical treatment that is used less commonly now that the above insecticides are available and convenient to administer. Lime sulfur may still have a use in shelters to minimize the contagion of the disease, as it can kill the mites within hours of application. We recommend using it in conjunction with one of the above treatments, particularly if maintaining separation is difficult in your shelter.

Concurrent antibiotic and anti-inflammatory treatment may be needed for secondary bacterial infections and persistent pruritus. An additional benefit of adding lime sulfur to your treatment regimen would be its antibacterial and antifungal properties that could help with opportunistic secondary infections.

All direct canine contacts should receive treatment regardless of clinical signs. Prophylactic or preventive treatment of dogs not in direct contact is unnecessary. If entering into foster with household animals, treating those animals would be reasonable. Likely, they may already be on one of the appropriate drugs as a routine flea, tick or heartworm preventative and no additional treatment would be indicated.

Similarly, preventive treatment is unnecessary for staff and volunteer personal dogs. We recommend staff and volunteers change their clothes when they go home after a shift as a precaution for multiple infectious diseases, and it is a good practice for scabies as well.

Separation

We cannot recommend a defined time period for separation of affected dogs from unaffected dogs, since there is presently no research establishing time to mite death after treatment. We reached out to both dermatology and shelter medicine colleagues and received a range of answers based on their clinical experience. Our best answer is we expect adult mites to be quickly killed after insecticide treatment (within a few days) and recommend maintaining individual housing for 3-5 days. If multiple affected dogs (like a litter of puppies) present together, they can be co-housed for their comfort and socialization, and attend play group with each other. There's no concern about taking infected dogs outside into play yards, but they shouldn't be combined with other dogs until after the first few days following treatment. If dogs are able to contact each other from adjacent kennels (like through wire fencing), we recommend keeping those kennels vacant for that time. Placing affected dogs in foster homes with household dogs is reasonable if those dogs are currently on a flea or tick preventive that is effective against scabies.

Scabies is zoonotic but it is typically self-limiting in people (the mites die on their own without treatment). Staff and volunteers interacting with the dogs during the first 3-5 days of treatment should wear gloves and gowns or clothing that covers their arms and legs. Mites are usually contracted via direct contact; however, it is possible to convey the mite from contaminated clothing or bedding.

These dogs don't need to be cleaned or visited last as long as gloves and gowns are worn, or the staff member or volunteer changes clothes after handling. We agree that a designated collar and leash is good practice. Bedding can be laundered with your regular laundry; a full wash and dry cycle will kill any mites on the bedding (similar for the collar and leash once the animal is adopted).

Adoption

Affected dogs can be made available for adoption immediately or 3-5 days after treatment is initiated, depending on your shelter's assessment of your staff's and community's aversion to risk. Consideration should be given to open and effective communication with the public regarding zoonotic risk and whether individual dogs are stable and comfortable medically (if secondary bacterial infections and/or pruritus are present).

Dogs can receive any follow-up treatment in their new home, and depending on your shelter, you may send treatment home with adopters or direct them to follow-up with their veterinarian post-adoption. We recommend sharing a disclosure with adopters that includes a brief description of scabies, the treatment administered, any follow-up treatment needed, and the risk of contagion to people and other dogs. It is important to keep in mind that although a dog will no longer be contagious following initial treatment, they will still look affected and special efforts should be made to normalize their appearance with staff, volunteers, and adopters. Consider special adoption promotions for these cases if you find they are difficult to adopt.

These two resources may be helpful when writing a disclosure:

- https://capcvet.org/guidelines/sarcoptic-mite/
- https://veterinarypartner.vin.com/default.aspx?pid=19239&id=4951492

Demodicosis

Demodex infestation is very different because it is not contagious among dogs and is not zoonotic. The demodex mite is part of the normal flora of dog's skin and proliferates in immune-compromised dogs. Puppies are the most commonly affected, usually seen in dogs younger than 18 months old. Demodex mite infestations are considered localized (affecting no more than two regions of the body) or generalized (extensive involvement, sometimes the whole body). Dogs are not pruritic unless affected by a secondary bacterial infection.

Treatment

There are no products labelled for use against demodex. Off label, the isoxazoline insecticides (NexGard®, Bravecto®, Simparica® and Credelio®) have become the treatment of choice. Treatment should be continued through two negative skin scrapes, 2-4 weeks apart. Localized infections can resolve on their own but also respond well to treatment.

Generalized infections require consistent long-term treatment (months) and infestations in adults should trigger an examination by your veterinarian for underlying disease. Like scabies, antibacterial treatment may be indicated for secondary bacterial infections, but unlike scabies, it is important to not administer anti-inflammatory medication because it can exacerbate the infestation.

Isolation

No isolation is required for demodex infections; these animals are not contagious and the mite is not zoonotic. No special handling or equipment is indicated for the dogs.

Adoption

Dogs can be made available for adoption or placed in foster care immediately following initiation of treatment. For generalized demodicosis, you may send home long-term treatment or ask adopters to follow-up with their veterinarian. We recommend sharing a disclosure describing the disease, the treatment initiated and the treatment follow-up needed.

Here are similar resources to help communicate with your adopters:

- https://capcvet.org/guidelines/demodex/
- https://veterinarypartner.vin.com/default.aspx?pid=19239&catId=102899&id=4951505&ind=62&objTypeID=1007

I hope this helps answer all of your questions!

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