ZOONOSES OF CANINE SCABIES (*SARCOPTIC* MANGE): A HIDDEN THREAT WITH AN ITCHY REALITY

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INTRODUCTION

In the world of zoonotic diseases - those that jump between animals and humans—few are as sneaky and irritating as sarcoptic mange, also known as canine scabies This contagious ectoparasitic skin disorder is caused by the burrowing mite *Sarcoptes scabiei* var. *canis*, which induces intense pruritus and inflammation in affected hosts (Scott, 2013). Transmission occurs through direct contact or indirectly *via* fomites, and the disease has been documented to spread across species, including to humans, qualifying it as a zoonotic threat (CDC, 2023). While treatable, its ability to go undiagnosed makes it a serious concern for pet owners, veterinarians, and public health professionals alike.

KEYWORDS: Zoonosis, Sarcoptic Mange, Canine Scabies, *Sarcoptes scabiei*, Human Risk, One Health

SARCOPTES SCABIEI VAR. *CANIS*

Sarcoptic mange is a microscopic, round-bodied burrowing mite—Sarcoptes scabiei—an obligate ectoparasite characterized by four pairs of legs, with the anterior two pairs terminating in suckers that enable firm attachment to the host's skin (Scott., 2013; Bowman, 2020). These mites inhabit the superficial epidermal layer (stratum corneum), where females burrow tunnels to lay eggs, initiating a life cycle that spans 3 to 4 weeks, entirely completed on the host animal (Merck Veterinary Manual, 2022).

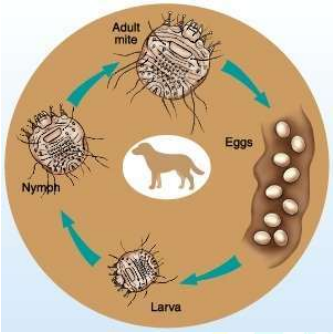
Upon infestation, the mites provoke a type I and type IV hypersensitivity reaction, resulting in intense pruritus, erythema, and secondary skin lesions (Scott, 2013). Transmission primarily occurs via direct physical contact, although indirect transmission through contaminated grooming equipment, bedding, or shared kennels has also been documented in clinical and shelter environments (CDC, 2023)

CLINICAL SIGNS IN DOGS

The symptoms of sarcoptic mange in dogs typically begin with sudden, intense itching. Commonly affected areas include:

- Ears (pinnae)
- Elbows and hocks

- Chest and abdomen
- Underside of the body
- Typical skin lesions include:
- Redness (erythema)
- Crusting and scaling
- Hair loss (alopecia)
- Thickened, wrinkled skin in chronic cases
- Excoriations (scratches and abrasions)



(*Muller and Kirk's Small Animal Dermatology, 2013)*

Dogs with advanced mange may develop secondary bacterial or yeast infections, oily dandruff (seborrhoea), and even become emaciated if left untreated (Merck Veterinary Manual, 2002).

ZOONOTIC POTENTIAL: CAN HUMANS GET IT?

Sarcoptic mange is a recognized zoonotic disease caused by *Sarcoptes scabiei* var. *canis*, which primarily infects dogs but can transiently infest humans through close contact (Scott, 2013; CDC, 2023). Although humans are accidental hosts, exposure to infected animals can lead to temporary cutaneous lesions, including erythematous papules, intense pruritus, and dermatitis, particularly on the arms, abdomen, and chest. However, because the mite is host-specific, it cannot complete its life cycle in humans, and the infestation typically resolves spontaneously within a few days to two weeks (Bowman, 2020). Preventive measures are essential in managing zoonotic risk. These include washing hands thoroughly after handling infected animals, wearing gloves during treatment or grooming, and disinfecting bedding and fomites. Laundering pet items in diluted household bleach (7–8 ml per litre of water) has been shown to reduce mite viability significantly and prevent reinfestation (CDC, 2023; Merck Veterinary Manual, 2022).

DIAGNOSIS: A TRICKY TASK

Diagnosing scabies can be challenging. The conventional diagnostic method—deep skin scraping followed by microscopic examination—is limited by its low sensitivity, especially in mild infestations, early stages, or well-groomed dogs, where mite burden may be minimal (Scott, 2013; Bowman, 2020). Studies indicate that skin scraping detects mites in only 20–50% of confirmed cases, underscoring the need for clinical correlation and response to treatment (Merck Veterinary Manual, 2022). The pinnal-pedal reflex, a clinical test where scratching is elicited by rubbing the ear flap, is often observed in infested dogs. While a positive response is suggestive, it is not pathognomonic, as it can also occur in other pruritic dermatoses (Scott, 2013).

OTHER DIAGNOSTIC METHODS INCLUDE

- ELISA tests for mite-specific IgE antibodies (though antibodies take time to develop)
- Histopathology, rarely used
- Trial treatment, which is often started if symptoms strongly suggest scabies

TREATMENT AND MANAGEMENT

Once diagnosed or suspected, treatment should begin immediately. All dogs in contact (even if asymptomatic) should be treated.

TOPICAL TREATMENTS

- Clipping hair and bathing of affected dog with an antiseborrheic shampoo
- Lime-sulfur dips (2–4%), safe and effective especially for puppies
- Organophosphate dips (less common now)

SYSTEMIC AND ORAL TREATMENTS

Modern options include:

- Isoxazolines (e.g., Bravecto, NexGard, Simparica)
- Macrocyclic lactones (e.g., Ivermectin, Milbemycin)
- Medicated chews, oral pills, or injections

These products often paired as preventives for fleas, ticks, and heartworms. However, some require prior heartworm testing. Corticosteroids may be prescribed to control inflammation and itching, and antibiotics for secondary skin infections.

SCABIES INCOGNITO: THE HIDDEN CASES

In well-bathed and regularly groomed dogs, the classical dermatological signs of sarcoptic mange - such as crusts, scales, and alopecia = may be absent or markedly reduced. This atypical presentation is referred to as “scabies incognito” or “clean dog syndrome”, wherein intense pruritus persists, but diagnostic findings are minimal (Scott, 2013). The grooming process may mechanically remove mites and debris from the skin surface, lowering mite counts and making diagnostic techniques like skin scraping less reliable (Bowman., 2020). In such elusive cases, a therapeutic trial with acaricidal treatment (e.g., isoxazolines or macrocyclic lactones) is often the most practical diagnostic approach, with clinical improvement post-treatment serving as indirect confirmation (Merck Veterinary Manual, 2022).

PREVENTION TIPS FOR PET OWNERS

- Avoid contact with stray or infected animals.
- Wash collars, leashes, and bedding regularly.
- Practice hand hygiene after petting or handling dogs.
- Keep pets away from wildlife like foxes, which can be carriers.

CONCLUSION

Though small in size, *Sarcoptes scabiei* poses a big threat through its zoonotic potential, severe itchiness, and diagnostic challenges (Scott, 2013) Recognizing the symptoms early, ensuring proper treatment, and maintaining hygiene can go a long way in

keeping both pets and humans safe (Merck Veterinary Manual, 2002). Canine scabies reminds us of the invisible but impactful ties between animal and human health - emphasizing the true spirit of One Health.

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