



UNIVERSITY OF CALIFORNIA, DAVIS
VETERINARY MEDICAL TEACHING HOSPITAL
DAVIS, CA 95616
SMALL ANIMAL CLINIC: 530-752-1393
DERMATOLOGY SERVICE

Information for Clients

DERMATOPHYTES

Introduction

Dermatophytes are a unique variety of fungus that causes infection of the superficial skin layers, and other keratinized tissue such as the claws and haircoat. There are many other varieties of fungus, including molds and yeast. Some varieties are pathogenic, causing either superficial skin disease, or internal disease. Most varieties of fungus are “normal,” non-pathogenic organisms commonly found in the environment.

The three most common dermatophytes that cause skin disease in small animals are: *Microsporum canis*, *Microsporum gypseum*, and *Trichophyton mentagrophytes*. *M. canis* is the most common cause of dermatophytosis in cats and dogs. This dermatophyte lives on the cat or dog, but can survive in the environment for up to 18 months! To complicate things, some animals may be only carriers of dermatophytes, and not exhibit any skin lesions. *M. gypseum* inhabits soil, and *T. mentagrophytes* is associated with rodents and their nests. Incidence of dermatophytosis varies with climate and available natural reservoirs. Hot, humid climates will have a higher incidence of dermatophytosis, as well as other fungal diseases. Animals that are housed closely together (i.e. kennel or shelter situations), or animals that dig in the dirt or hunt rodents will be at higher risk for dermatophytosis. Certain breeds of dogs and cats seem to have a genetic predisposition for *M. canis* infections: The Yorkshire Terrier and the Himalayan and Persian cat. Dermatophytes are also of public health concern as they can be spread to humans, particularly the elderly, children, or individuals with compromised immune systems.

Clinical Signs

Dermatophyte infections can vary considerably in their clinical appearance. Only occasionally will a dog or cat present with the classic “ringworm” circular area of hair loss with scale around the edge. As dermatophytes almost always invade the hair follicles on dogs and cats, the first clinical sign often is simply an area of hair loss. There may or may not be inflammation or other obvious changes to the skin. Some infections will cause severe skin changes including patchy hair loss with crusting, scale and papules (rash) that can become generalized over the body. Smaller affected areas may be of any shape or size, and located anywhere on the dog or cat, though most often seen on the face and extremities. Localized lesions, known as a dermatophyte kerion, are sometimes seen. These are nodular, draining, lesions that are the body’s immune response to the invading dermatophyte.

Diagnosis

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Because of the variable clinical appearance of this disease, diagnosis can NOT be made strictly on physical exam findings. One or more laboratory tests are necessary to diagnose a dermatophyte infection. A fungal culture with microscopic identification of the dermatophyte is usually necessary for a definitive diagnosis. Alternatively, a skin biopsy can diagnose a dermatophyte infection most of the time. In some cases, the dermatophyte spores can be observed on affected hairs when examined under the microscope. If the spores are visualized (40% - 70% of cases), this is diagnostic. An inexpensive, but only partially useful test involves shining a Wood's lamp (UV "black" light) on the affected area. Approximately 50% of *M. canis* infections will show an apple green fluorescence of the hair shaft. Regardless of the result of a Wood's lamp examination, a culture should be done to best attempt a definitive diagnosis.

Treatment

Treatment varies with the severity of the infection, as well as the animal's age, overall health and environment. In younger, healthy animals the infection may spontaneously resolve on its own. However, in most cases, fairly aggressive therapy is necessary. Therapy for dermatophytosis may include not only treatment of the patient, but treatment of all in-contact animals, and the environment. If a dermatophyte carrier animal is suspected in the household, all animals will need to be fungal cultured to identify a possible carrier. Animals that culture negative should be separated from the infected animal(s), if possible. In multiple animal households topical therapy in the form of a shampoo or leave-on rinse may be recommended for all animals. Long haired dogs and cats should be clipped short to simplify topical therapy, as well as slow the environmental contamination. The patient with active lesions usually will require systemic (oral) medication. If environmental contamination is suspected, (almost guaranteed with *M. canis*), then environmental treatment is required as well. Hard surfaces in the environment should be disinfected with a 1/10 household bleach/hot water solution, Oxyfresh® cleanser or a 3% chlorhexidine solution. All bedding, washable rugs and other contaminated washable fabric items should be washed in hot water with detergent and bleach (if possible) or Oxyfresh®. Carpeting and upholstered furniture should be steam machine cleaned with chlorhexidine or Oxyfresh® added to the hot water. Vacuum and disinfect all heating and cooling vents. Change furnace filters weekly. Remember to seal the vacuum bag in plastic and dispose of frequently. Because *M. canis* is spread by contact with infected hairs, remember to disinfect or replace all grooming tools, pet collars, pet toys, portable pet kennels, etc.

Response to therapy is monitored by improvement in the clinical signs and monthly fungal cultures. The patient must have two consecutive negative cultures each one month apart before the condition is considered cured. However, reinfection from the environment can be a problem in some situations. Prognosis varies as to the type of dermatophyte infection, the patients overall health and environment. Be patient! Often, it may be several months before a complete cure is achieved.

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