

Case Study

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Concurrent Dermatophytosis in Atopic Dogs

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ABSTRACT

Twenty atopic dogs presented during the period of study were checked for fungal infections using trichography, wood's lamp examination and fungal culture. Four (2 %) animals were found affected with dermatophyte infections along with atopic dermatitis indicating the importance of concurrent dermatophytosis in atopic dogs.

Introduction

Atopy is one of the common underlying skin diseases in dogs; it is a multifaceted disease associated with exposure to various offending agents such as environmental and food allergens (Favrot *et al.*, 2010). Genetic mutations lead to alterations in the final keratinization of the epidermis and dysfunction of skin barrier facilitating the transepidermal penetration of environmental allergens, microbial antigens and primary irritants causing exacerbation of innate and adaptive immune responses (Hillier, 2002). This condition could be complicated with different secondary or concurrent skin infections. Identifying such infections is needed for successful treatment of atopic

dermatitis.

Materials and Methods

Study was conducted at Teaching Veterinary Clinical Complex, Veterinary College, JAU, Junagadh. Twenty five atopic dogs (out of 221 dogs with dermatitis) were identified using intradermal test, Favrot's criteria and nonresponse to rational treatment during the period of study (one year). Diseased were subjected to different fungal detection tests including wood's lamp examination, trichography and fungal culture. Skin lesions were examined using wood's lamp kept 4 to 5 inches from lesion and lesions were tested in a dark room. Hairs from affected skin were plucked with forceps in the direction of the

hair growth and were placed in a drop of mineral oil on a slide. It was then examined under low - power magnification (10 x) after application of coverslip. Also skin scrapings from the lesions were collected under sterile precautions and were inoculated on dermatophyte test medium (DTM) added with dermatosupplement and sabouraud dextrose agar (SDA). Both were incubated at room temperature for 5 days. Morphology of microbial colony was studied for identification of fungus. Microscopical examination of fungal colonies using lactophenol cotton blue staining was also carried out for confirmation of diagnosis.

Results and Discussion

Four atopic dogs (2 %) were identified to suffer from concurrent dermatophyte infections. Bright apple green fluorescence was observed on Wood's lamp examination (Fig. 1). Microscopical examination revealed fungal spores attached to hairs (Fig. 2). Sabouraud dextrose agar and dermatophyte test medium agar showed white spreading colonies (Fig. 3 & 4). Also

colour of dermatophyte test medium agar changed from yellow to red by 5 days. Microscopical examination using lactophenol cotton blue revealed numerous microconidia of dermatophytes confirming dermatophyte infection in atopic dogs. All the affected animals were responding to treatment for atopy along with topical application of antifungal agent also.

Majority of secondary infections in atopic dogs are commensal organisms. But concurrent infections of dermatophytes can complicate this skin condition. Lockwood (2017) also reported concurrent infection of dermatophyte in an atopic dog with improper treatment. Wilson *et al.*, (1993) and Klein *et al.*, (1999) observed infections of dermatophytes during flaring up of atopic dermatitis. Fungi can act as either allergen or secondary infectious agent. So use of antifungal drug is important in atopic dogs with fungal infection. Also dogs with repeated occurrence of dermatitis along with dermatophytosis should also be checked for atopy.

Fig.1 Lesions in dermatophytosis observed through Wood's Lamp

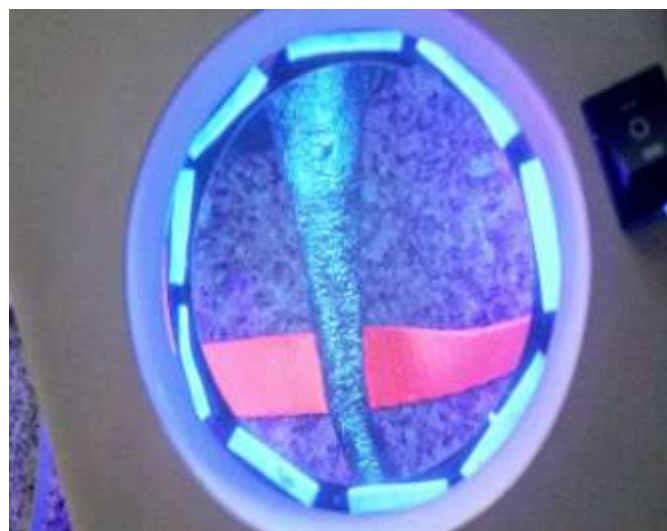


Fig.2 Ectothrix on hair in Trichography



Fig.3 Dermatophyte cultures in SDA and DTM

SDA



DTM

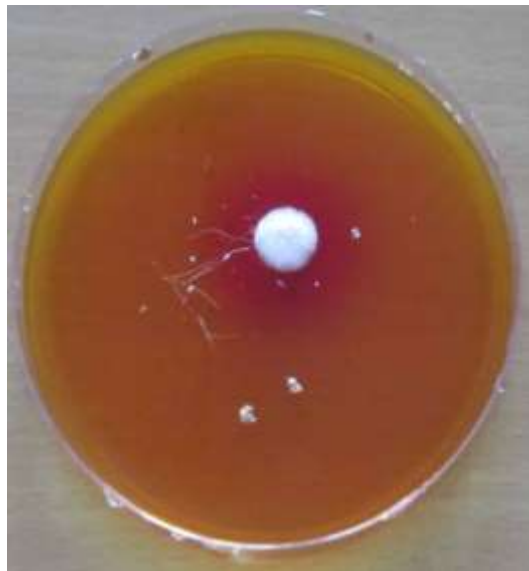


Fig.4 Microscopical examination of fungal culture



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