SURVEY OF FUNGAL ISOLATES FROM CANINE MYCOTIC DERMATITIS IN CHENNAI

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ABSTRACT

A total of 134 clinical samples such as hair plucks and skin scrapings were collected from dogs with cutaneous lesions of alopecia, hyperpigmentation, and scales. A part of clinical material was directly examined under microscope after digestion with 10% potassium hydroxide. The remaining material was cultured in Sabouraud’s Dextrose agar to study the presence of fungi based on the colony morphology and type of pigmentation. The microscopic appearance of fruiting heads and spores were studied using slide culture technique. Dermatophyte test agar medium was used to screen the Dermatophytes. In dermatophytes, Trichophytan spp (23%) was frequently isolated along with Microsporum sp (3%) and Epidermophytan sp (1%). Among the non dermatophytes, Aspergillus niger (28%) was frequently isolated followed by Aspergillus fumigatus (6%), Phycomycetes sp (3%), Penicillium sp 2%, Curvulera sp (1%) and Alternaria sp (1%). Along with the molds, yeast such as Malassezia pachydermatis (30%) and Candida albicans (2%) were also isolated.

Key words: Mycotic dermatitis, dog

Fungal infections of the skin, hair and nails are common worldwide and their increasing incidence in the past two decades has been overwhelming. The etiology of fungal infections can be due to true pathogenic fungi or opportunistic fungal infections. In recent times the opportunistic fungi started causing more number of infections and tend to complicate other problems especially allergies, keratinisation disorders, skin fold dermatitis, immunodeficiency and previous antibiotic administrations (Lewis et al.,1991). The reported incidence of mycotic dermatitis in India is variable with the geographic locations. The present study was undertaken to survey the common fungal agents prevalent in Chennai city.

A total of 134 clinical samples composed of hair plucks and skin scraping specimens were collected from dogs, with clinical suspicion of fungal dermatitis, presented to Madras Veterinary College Teaching Hospital. The affected areas were cleaned with 70% alcohol. The hairs were plucked with forceps and scales and crusts were removed with blunt scalpel (Hungerford et al., 1998). The

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Microscopic appearance of spores of Dermatophytes

Malasszia Sp Parentic cells and buds are characteristically bottle shape (Lacto phenol cotton blue stain x 1000)
Microscopic appearance of fruiting heads and spores of non dermatophytes

age, breed, sex, living conditions and clinical data of the animals were recorded.

A part of clinical sample was examined for fungal elements by direct microscopy after digestion with 10% potassium hydroxide. The remaining part of the sample was subjected to fungal culture (De hoog et al., 2000). The Dermatophyte test agar (Hi-media®) was used as screening medium for dermatophytes. The preliminary identification of dermatophytes were based on the macroscopic appearance of colonies and microscopic features of macro conidia and micro conidia (De hoog et al., 1999). Sabourdard’s dextrose agar with Chloramphenical and cyclohexamide (Hi-media®) was employed for culturing the fungi. The cultures were incubated at 28º C and 37º C for mould and yeast cultures respectively. They were examined for fungal growth daily for 10 days.

The slide culture technique (Quinn et al., 1994) was used to study the structure of fungal hyphae, macro and micro conidia. Based on the
colony morphology and microscopic appearances (fig.), the fungi were identified (De hoog et al., 2000). Culturing of skin debris was considered unreliable, as small number of the yeasts is present on the skin as part of cutaneous flora. So Acetate tape impression smears were taken from the lesions and stained with Giemsa staining to study the yeast infection (Hungerford et al., 1998).

The clinical presentation of dermatomycoses included patches of alopecia, scales, crusts, erythema, hyper pigmentation and intense pruritus (Thomsett, 1986 and Scott et al., 2001). The lesions were mainly observed on the back, legs, face, neck, ears and digits in this study and was as in agreement with the reports of Scott et al., (2001). The predisposing factors for mycotic dermatitis included age, immune status, environment and poor nutritional status (Scott et al., 2001). In the present study the incidence of dermatomycoses was higher (45%) during September to December. Majority of the dogs were kept under indoor confinement (dwelling in apartments) and had a very limited exposure to sunlight. Such an environmental risk factor was also reported by Sidhu et al. (1993), who recorded a higher incidence during October to December. Prado et al. (2008) also reported that there was higher incidence of dermatitis in dogs kept under indoor conditions.

Several authors reported that the dermatophytes were common in less than one year old dogs (Lewis et al., 1991 and Prado et al., 2008). Similar was the observation in this study too. However the incidence of non dermatophytes were high (80%) in aged above two years. A higher incidence of mycotic dermatitis was observed in male dogs (Ajula et al., 1999 and Prado et al., 2008).

However Brilhante et al (2003) reported that there was no sex predisposition in the incidence of fungal disease. In the present study the incidence was higher (64%) in male dogs.

The incidence of dermatitis was higher in pure bred dogs (69%) than in non descript dogs (31%). Among the pure bred dogs, the incidence was high in Labradors (28%) followed by German shepherds (14%), Dobermans (10%), Spitzs (9%), Daschund (8%), Great Danes (4%), and others (27%). The breed predisposition observed in this study was in accordance with the previous reports of Ajula et al. (1999).

Direct microscopic examination revealed that only 40% of the clinical materials were infected with fungal infection, where as fungal growth was observed in 90% of clinical materials by culture method. Direct microscopic examination was found to be less sensitive than fungal culture especially for yeast. This was probably due to poor visualisation of yeast structures under direct microscopy. Direct examination though gave an immediate diagnosis, more accurate results were obtained with fungal cultures (Prado et al., 2008).

Among dermatophytes, *Trichophyton* spp (23%) was frequently isolated along with *Microsporum* sp (3%) and *Epidermophyton* sp (1%). Eventhough several authors isolated *Microsporum* sp frequently (Sidhu et al., 1993; Cafarchia et al., 2006 and Prado et al., 2008), it was isolated only in few cases in this study. This could be due to the difference in geographic and climatic distributions. Among the non dermatophytes, *Aspergillus niger* (28%) was frequently isolated followed by *Aspergillus fumigatus* (6%), *Phycomycetes* sp (3%), *Penicillium* sp 2%, *Alternaria* sp (1%) and *Curvularia* sp (1%). This concurred with the findings of Sidhu et al (1993) who reported a higher incidence of *Aspergillus* sp.
Along with the moulds, yeast such as *Malassezia pachydermatis* (30%) and *Candida albicans* (2%) were isolated. Prado et al (2008) reported that the dermatophytes and *Malassezia pachydermatis* were the common pathogenic fungi isolated in dogs and the same was observed in this study. Such a higher incidences of *Malassezia* dermatoses (30%) and *Trichophyton* dermatoses (23%) underscores the need for early diagnosis and intervention strategies.

**REFERENCES**


