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Zoonotic dermatophytosis by *micro-sporum canis* in cats

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Feline dermatophytosis is a superficial mycotic skin disease, most commonly caused by a zoophilic dermatophyte*Microsporumcanis* which contributes to more than 90 per cent of cases of feline dermatophytosis (Frymus*et al*.,2013). This disease is highly contagious and acquired following the exposure to arthrospores through direct contact with an infected animal or fomites such as grooming tools, cages and bedding. Arthrospores present in the environment are infectious for 12 – 24 months (Miller *et al*., 2013).

Two male Persian cats of 10 months (body weight3 kg) and 3 months (body weight1.5 kg) respectively being owned by different pet owners were presented to the University Veterinary Hospital, Kokkalai, with the complaint of severe alopecia since three weeks. Alopecia was started initially as a small circular area with scales which rapidly progressed to the entire body. Owners reported minimal pruritus and normal appetite in the pets. In addition, the owners themselves had pruritus and circular skin lesions on the arm, fore arm and chest region, which had started healing after antifungal therapy (Fig. 1 and Fig. 2).

On dermatologic examination of the animals, generalized annular alopecia, excessive crusty dermatitis and scaling especially in the regions of head, pinnae, tail and paws were observed (Fig. 3 and Fig.4). Examination of skin scrapings revealed the presence of fungal spores. On Wood's lamp examination of hair from affected area, typical apple – green fluorescence could be observed (Fig 5). Fluorescence positive hairs were chosen and plucked carefully using sterile haemostat. Hair plucks were inoculated into dermatophyte test medium (DTM). Plates were observed daily for colour change which correlated with the growth of fungal colonies (Fig. 6). Identification of the species of the dermatophyte was done by microscopical examination of the macroconidia. Fungal colonies were collected by a piece of clear acetate tape. Three – four drops of lactophenol cotton blue stain was placed on a microscope slide then the tape was placedover it. The slide was evaluated after 15 minutes under 10X and 40X resolution of the microscope.Macroconidia of *M. canis* were

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identified (Fig. 7). They were spindle shaped with thick echinulate walls. At the terminal end, echinulations (spines) were more pronounced, which often forms a knob. Six or more cells were present inside the macroconidia (Miller *et al*., 2013).

Based on the clinical signs, laboratory findings and culture results cases were diagnosed as zoonotic dermatophytosis caused by *Microsporumcanis*. Daily therapy with itraconazole @10 mg/kg once daily, orally (Vetconazole® 100mg capsules) for three weeks along withtopical rinses of 2 % lime sulphur (Demoscanil®) dips twice weekly for six weeks was given.

Clinical improvement was noticed after three weeks. Pulse therapy (one week on; one week off) with itraconazole was continued for the next three weeks. After nine weeks the sample from the cats for culture was collected using sterile toothbrush (Mackenzie) method, brushing of the entire hair coat was done for

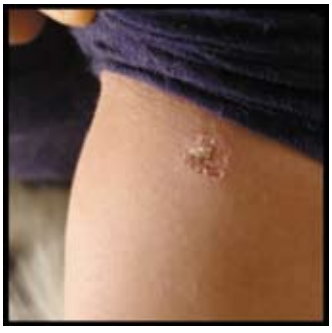

Fig. 1. Circular healing scaly lesion in owner's arm associated with kitten

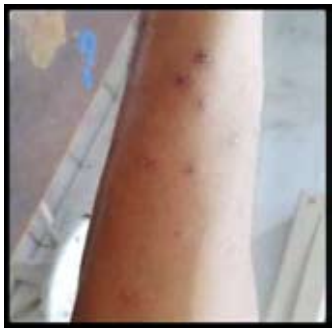

Fig. 2. Multiple circular lesions in owner's fore arm associated with young cat

Fig. 3. Circular alopecia around eyes and muzzle in kitten

Fig. 4. Generalized crusty dermatitis and scales in young cat

Fig. 5. Apple – green fluorescence on Wood's lamp examination in kitten

Fig. 6. Colonies of *Microsporumcanis* on dematophyte test medium

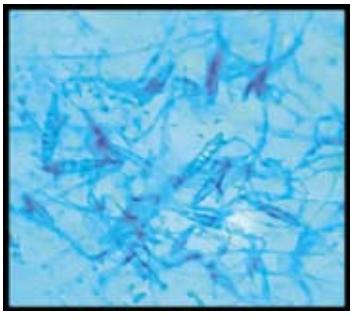

Fig. 7. Macroconidia of *Microsporumcanis*

Fig. 8. Kitten after six weeks of anti-fungal therapy

Fig. 9. Young cat after six weeks of anti-fungal therapy

three minutes and the bristles were pressed gently against the fungal culture medium for 5 – 6 repetitions. No fungal growth was noticed even after 16 days of inoculation. Cats had shown complete clinical recovery after nine weeks of treatment.

There was no single pathognomonic lesion specific for the dermatophytosis. The diagnosis could be missed often because of protean nature of the dermatological findings(Miller *et al*., 2013). The apple – green fluorescence noticed on *M. canis* infected hair shafts is due to pteridine (a water-soluble chemical metabolite) that is located within the cortex or medulla of the hair. The chemical reaction that results from infection gives fluorescence and is not associated with spores or infective material (Moriello*et al*., 2017). *Microsporumcanis*is zoonotic in nature and care is needed to prevent the spread of infection to other animals and humans. Aggressive therapy is recommended for infections with *M. canis* due to its zoonotic nature. Confirmed cases should be treated with combination of topical and systemic antifungal agents. Topical therapy is essential as it is the only way to kill the spores on the hair coat whereas systemic therapy kills only the spores in the hair follicle (Moriello*et al*., 2017).

Summary

Ringworm is a treatable and curable disease. Proper diagnosis and prompt treatment is warranted in young and immunosuppressed animals.

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