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Successful management of dermatological disorder due to *Microsporum canis* in a persian cat

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Abstract
Feline dermatophytosis is caused by superficial fungal infection of keratinized cutaneous structures in cats. *Microsporum canis* is the most common and important cause of dermatophytosis in cats, due to its pathogenicity and significant zoonotic potential. A persian cat was presented with history of almost complete alopecia, pruritis and crusting. The cat initially had localised patchy alopecia and was treated previously for the past 6 months with antibiotics and anti-inflammatory ointments. There was no improvement and gradual worsening of the condition was evident. Dermatological examination, revealed alopecia with sparse hair on extremities, crusting, scaling and intense pruritis. Other vitals were normal. Routine diagnostic examinations such as skin scrapings, coat brushings and trichogram revealed no abnormalities while Wood's lamp examination revealed apple green fluorescence. Hematological and Serum Biochemical examination revealed mild leucocytosis with mild neutrophilia. Fungal culture with hair pluck revealed *Microsporum canis.* The cat was diagnosed to have dermatophytosis due to *M. canis.* Treatment was started on itraconazole orally (@ 5 mg/kg once daily) on a "week on – week off" basis along with oral and topical supportive medications. The cat showed improvement from 3rd week and hair coat showed remarkable improvement in 12 weeks.

Keywords: Feline dermatophytosis, wood's lamp, fungal infection, cats, remarkable improvement

Introduction
A three years old female persian cat was presented with history of severe hair loss, itching and crusts on skin (Figure 1). The cat was already treated elsewhere with systemic antibiotics and anti-inflammatory ointments for a prolonged period of time. On physical examination, the rectal temperature was normal (102.2°F) and heart rate was 150bpm.

Dermatological examination, namely skin scraping, coat brushing, tape impression, trichogram, direct impression, wood's lamp examination was performed (Gross *et al.*, 2005) [1], out of which the wood's lamp examination revealed apple green fluorescence in the hairs (Figure 2), indicating the presence of dermatophytosis. Haematological and Serum biochemical parameters were normal.

The hair samples were subjected to fungal culture on Sabouraud Dextrose Agar, and a white fluffy colony was present in the centre (Figure 3), confirming dermatophytosis due to *Microsporum canis* infection (Mariello, 2019) [4].

The cat was treated with Itraconazole @ 10mg/kg b.wt once a day orally, for a period of 28 days, followed by 5mh/kg b.wt for 5 weeks on a "Week on-week off" basis. The treatment was repeated for 3 cycles (Puls *et al.*, 2017) [2].

Silymarin, a hepatic cytoprotectant, was administered @ 10mg/kg once every day orally, to counteract the hepatotoxic effects of long-term administration of itraconazole. An Ω – 3 fatty acid supplement was administered @ 2.5ml orally every 12 hours.

Topical therapy was advised by administering Terbinafine cream – 1% w/w, once a day for 4 weeks, and a shampoo consisting of Miconazole (2% w/v) and Chlorhexidine (2% w/v), once a week. Environmental hygiene was advised by washing the dwelling areas of the cat with bleach (1:100 dilution with water) and isolation of affected cat.

The animal was presented for follow-up, after four weeks of treatment. There was visible hair growth (Figure 4a), and there was visible reduction in apple green fluorescence in Wood's lamp examination. On week 8, there was a remarkable improvement in hair growth and great reduction in apple green fluorescence in Wood's lamp examination (Figure 4b). On week 12, the hair coat is back to normal and there was no apple green fluorescence evident on Wood's lamp examination (Figure 4c).

Fig 1: Severe alopecia and crusting on the entire body (1a), Legs (1b), ears (1c) and face (1d)

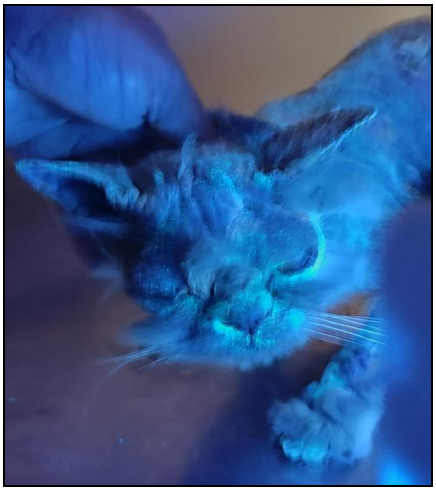

Fig 2: Apple green fluorescence visualized in the hairs during Wood's lamp examination on the body (Fig2a) and face (Fig 2b)

Fig 3: SDA agar-cloudy white colony

Fig 4a

Fig 4b

Fig 4c

Fig 4: Recovery of the cat at 4th week (Fig 4a), 8th week (Fig 4b), and 12th week (Figure 4c). Over the period of 12 weeks, there is regrowth of hair and reduction in the crusty lesions

Discussion

Feline dermatophytosis is a superficial fungal infection affecting the keratinized cutaneous structures of the skin of cats. It is due to *Microsporum canis*, which also has zoonotic potential. It may be presented with a large range of potential dermatological signs (most commonly multifocal patches of alopecia with variable scaling), thus lending to misdiagnosis of the condition without appropriate diagnostic testing. Diagnosis of this condition is of utmost importance in order to provide specific therapy. The disease is treatable and curable once a diagnosis has been established.

Conclusion

The misdiagnosis of feline dermatophytosis for other disorders, can have devastating consequences, leading to irreversible damage to the skin and hair coat, prolonged suffering, and increased risk of transmission to other animals and humans. Therefore, it is imperative to prioritize accurate and timely diagnosis to ensure the initiation of targeted therapy, preventing further complications and promoting successful recovery.

Conflicts of interest

There are no conflicts of interest.

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