Case Report

Effect of One Year Treatment with PCSO-524® on Feline Dermatophytic Pseudomycetoma

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Antinol (PCSO-524®)
Case Study Contest 2020

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Abstract

Feline dermatophytic pseudomycetoma is a fungal infection of the skin caused by dermatophytes (*Microsporum spp.*)

The diagnosis is based on histopathological test.
The infection causes clinical lesion and chronic inflammation of the skin.
Long-term treatment is necessary with antifungal agents and anti-inflammatory drugs are recommended in case of severe inflammation.

Due to anti-inflammatory and skin enrichment effects of PCSO- 524 (Antinol®), it is used for supportive treatment of feline dermatophytic pseudomycetoma in this case.

Administration of PCSO-524 (Antinol®) also reduces the risk of adverse effects from using other anti-inflammatory agents.

The use is simple and can reduce the dosage of other medications, particularly in difficult cats that do not cooperate with taking oral medicine.

Treatment outcome can be evaluated from physical examination, hematological and blood chemistry tests, and body weight gain.

Over one-year treatment period, there was no signs of side effects from the treatment, the blood test results were stable and the quality of life and social interaction between the cat and the owner was improved.

Keywords: Feline, Antinol®, PCSO-524, Dermatophytic pseudomycetoma

Introduction

Feline dermatophytic pseudomycetoma is an uncommon disease caused by dermatophytes, usually Microsporum canis. It is most common in Persian cats and characterized by fungal infection of deep dermal and subcutaneous layer of the skin. The fungi can enter dermis layer from wounded skin, such as bite wound, cause skin disorders and persist for a long time. Therefore long-term treatment may be required from 6 months to several years.

The medical treatment is antifungal agent such as griseofulvin, itraconazole, or terbinafine. Itraconazole is drug of choice and is licensed for dermatophytosis long-term use.

Non-steroidal anti-inflammatory drugs (NSAIDs) may be used to control the skin inflammation in case of severe skin damage, but not without the risk of side effects.

Nutraceutical is therefore introduced as an alternative to NSAIDs in order to minimize the impact of the side effects. In this case, PCSO- 524 (Antinol®) was selected mainly for its anti-inflammatory effects and there was no previous report of using PCSO- 524 (Antinol®) for treatment of skin infection in cats.

Case history

A 1-year old neutered, male, domestic short hair cat named SONG with body weight 5.3 kg was completely vaccinated and lived indoor with another cat.

SONG was bitten by a stray cat while wandering out of the house, causing a deep wound and injury to the subcutaneous tissue. The cat was taken to a hospital and was treated with wound dressing, laser, amoxicillin/clavulanic acid, and steroidal anti-inflammatory drug for 2-3 months. the wound was progressive in worsen condition.

Fine needle aspiration technique was used to collect sample for cytological test and the test results showed no abnormality cells. The cat was then referred to the hospital for treatment of chronic wound.

Physical examination

Physical examination and palpation of abdominal area found a firm and irregular nodule under the skin, fistula ulcerate at the dermis and subcutaneous layers with seropurulent discharge, granule material, and oil. No disorders of the other systems were observed.

Diagnostic plan and Results

Due to failure of empirical treatment in the case history, **surgical procedures** were required for diagnosis and treatment. Biopsy was used to collect tissue for histopathological examination and to differentiate the disease among saprophyte/dermatophyte infection, bacterial infection, pyoderma, and neoplasia. Hematological test was performed prior to and after the surgery and the cat was also tested for FIV and FeLV infection.

The microscopic examination of the specimen that was section of the skin mass revealed diffuse multifocal extensive fungal granuloma throughout fibrotic dermis. Each granuloma consisted of necrosis in the center, accumulation of large arthrospore, numerous fungal hyphae, infiltration of neutrophils, foamy macrophages and lymphocytes.

Hematological and blood chemical test found parameters within normal ranges and the test kit examination showed that the cat was FIV/FeLV negative (Table 1).

The final diagnosis was **feline dermatophytic pseudomycetoma caused by Microsporum spp**. Other identification techniques include wood's lamp, microscope, PCR, cytology, cell culture, and tissue culture.

Treatment outcome and Follow up

7th December 2018: Physical examination and blood analysis was performed (Table 1).
The cat was given wound dressing and scheduled for surgical treatment on the following day.

8th December 2018: The mass was surgically removed and biopsy for histopathological examination. The prescription after the surgery included cephalexin 25 mg/kg po bid 7 days and tolfenamic acid 4 mg/kg po sid for 3 days.

14th December 2018: The cat was diagnosed with dermatophytic pseudomycetoma caused by Microsporum spp. based on histopathology of the biopsied tissue.
Antifungal drug, itraconazole 10 mg/kg po sid was prescribed for 6 months.

16th December 2018: Suture stitches were removed. The wound healing was satisfied and progressing.

23rd December 2018: The wound condition was worsening so Antinol® 1 capsule po sid was added to the prescription to reduce the inflammation, chlorhexidine and nano spray were used for wound dressing.

The cat was scheduled once a month for alanine aminotransferase (ALT) examination to evaluate the liver damage. Silymarin 20 mg/kg po sid was given on the 15th of June 2019 due to mild increased level of ALT.

After 1 year of the treatment, the skin inflammation was improved (Figure 1 and 2).
The blood analysis showed normal parameters including ALT (Table 1 and 2).
The body weight was increased (Table 3) as well as the life quality and health in general, and the owner was satisfied with the treatment results.

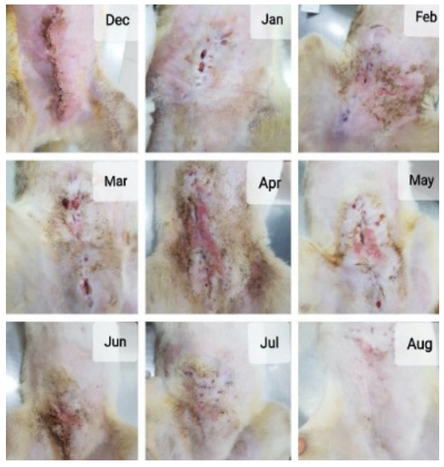

Figure 1. Skin lesion during December 2018 to August 2019

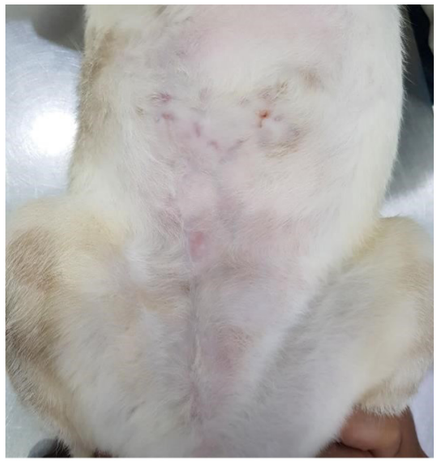

Figure 2. Skin lesion on November of 2019

The figures in December of 2018 showed severe inflammation of the skin, which gradually improved in August of 2019.

Table 1. Results of blood analysis during 1 year of treatment

DD/MM/YY Parameter	07/12/18	13/01/19	10/08/19	22/09/19	9/11/19	1/01/20	Ref. Range
WBC	23.0 H	19.6 H	20.1 H	24.4 H	19.7 H	21.4 H	5.5-19.5
Lymph (103uL)	4.9	3.1	7.0	3.4	4.9	8.0 H	0.8-7.0
Mono (103 uL)	1.3	1.6	1.3	2.8 H	2.0 H	1.3	0.0-1.9
Gran (103uL)	16.8 H	14.9	11.8	18.2 H	12.8	12.1	2.1-15.0
Lymph (%)	21.1	16.0	34.7	14.1	25.0	37.6	12.0-45.0
Mono (%)	6.0	8.4	6.8	11.4 H	10.0 H	6.0	2.0-9.0
Gran (%)	72.9	75.6	58.5	74.5	65.0	56.4	35.0-85.0
RBC (106uL)	7.43	6.28	7.93	7.99	8.50	8.13	4.60-10.0
HGB (g/dL)	13.9	11.5	12.1	11.8	12.1	12.0	9.3-15.3
HCT (%)	38.7	32.2	35.4	35.0	37.1	34.8	28.0-49.0
MCV (fL)	52.2 H	51.4	44.7	43.9	43.7	42.9	39.0-52.0
MCH (pg)	18.7	18.3	15.2	14.7	14.2	14.7	13.0-21.0
MCHC (g/dL)	35.9	35.7	34.1	33.7	32.6	34.4	30.0-38.0
RDW (%)	17.2	16.7	15.4	15.3	15.3	16.0	14.0-18.0
PLT (103uL)	408	418	386	261	298	245	100-514
MPV (fL)	10.5 H	10.3 H	11.3 H	9.9 H	10.7 H	9.6 H	5.0-9.0
PDW	15.8	15.8	15.7	15.4	15.4	14.9	-
PCT (%)	0.428	0.430	0.436	0.258	0.318	0.235	-
CRE (mg/dL)	1.54	0.75	1.7	1.52	1.6	1.3	0.3-2.1
ALT (U/L)	31.6	19.5	48.7	45.5	35	35	20-100

H indicates values above normal level

Table 2.
ALT level during January to June of 2019

Date (dd/mm/yy)	ALT (U/L)
15/02/19	25.3
15/03/19	34.1
20/04/19	26.0
18/05/19	76.1
15/06/19	93.4

Reference range: 20-100 U/L

Table 3.
Body weight of the cat during 1-year period

Month	Body weight (kg)
December 2018 (before surgery)	5.1
January 2019	4.65
April 2019	4.9
July 2019	5.3
October 2019	5.5
December 2019	5.6

Discussion

Feline dermatophytic pseudomycetoma is an uncommon disease and the treatment times requires various from up to 6 months to several years. Some cases do not respond to the treatment and some cases respond well in the beginning but the recurrence occurs.

There was a report in 8 years old cat that received a treatment for over 4 years including several surgical excisions and long term administration of griseofulvin/itraconazole/terbinafine.

There has never been a report of using PCSO-524® for feline dermatophytic pseudomycetoma prior to this report, However from this case study demonstrated the safety of PCSO-524® for long-term use without any side effects on cat and on blood parameters of this case.

Conclusion

The study showed that PCSO-524® is effective for control of inflammation and improve skin health and can improve life quality and body weight gain of fungal infected animals.

The active ingredients of PCSO-524® have anti-inflammatory effect since they inhibit the mechanism of action of COX and LOX enzyme. When the inflammation is controlled, then the skin lesion is improved. The lack of side effects on clinical signs and blood parameters of PCSO-524® when used for long-term treatment is demonstrated in the study.

References

1. Chang S.C., Liao J.W., Shyu C.L. Dermatophytic pseudomycetomas in four cats. Vet. Dermatol. 2010;22:181–187.

2. David Grant. Feline dermatophytic mycetoma (pseudomycetoma). [Website]. https://veterinary-practice.com/article/feline-dermatophytic-mycetomapseudomycetoma?fbclid=IwAR3Yb3J-viDTYWuu4v6o9t4nUOl2mCJ8dAhNfjt8552kLV86i1dvbnsCYpc. (12/12/61)

3. Lerpen Duangkaew, et al. Cutaneous blastomycosis and dermatophytic pseudomycetoma in a Persian cat from Bangkok, Thailand. ELSEVIER, 2017.

4. Miller W., Griffin C., Campbell K. 7th ed. Elsevier; St. Louis, MO: 2013. Fungal and Algal Skin Disease. Small Animal Dermatology; pp. 259–261.

5. Nobre Mde O, et al. Disease progression of dermatophytic pseudomycetoma in a Persian cat. PubMed, 2010 .

6. Treschow AP, Hodges LD, Wright PFA, Wynne PM, Kalafatis N, Macrides TA. Novel anti- inflammatory o-3 PUFAs from the New Zealand green-lipped mussel, Perna canaliculus. Comp Biochem Physiol 2007;147: 645–56.

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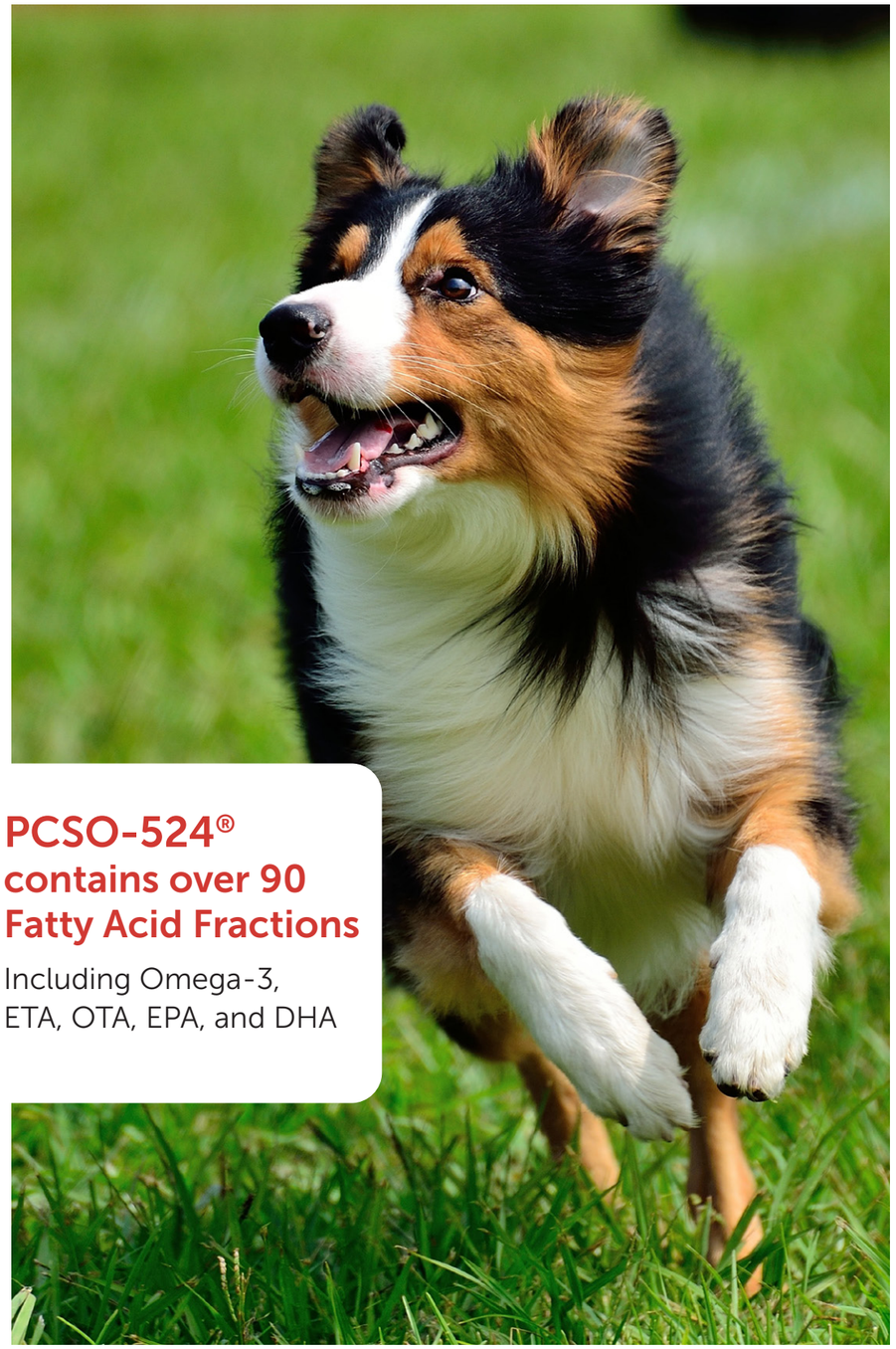

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