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Case Report

# Malassezia spp. Overgrowth in a Chinchilla Cat

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## ABSTRACT

Malassezia spp. is a commensal yeast organism that is a normal resident of the skin, mucosa, and ear canals. A castrated male, 4-year-old Chinchilla cat, was brought with hair loss and skin lesions on ears, face and arms. Skin scrapings were collected from the lesions. Terbinafine HCl (30 mg/kg, PO), Omega 3 and Omega 6 essansial fatty acid supplement (Megaderm®, Virbac) were administered to the patient.

**Keywords:** Malassezia, Chinchilla cat, Dermatitis, Predisposing factor.

## INTRODUCTION

The genus *Malassezia* consists of lipophilic yeasts, which are components of the cutaneous microflora of many warm-blooded animals including humans. This genus has recently been revised, based on morphological, physiological and molecular criteria, to include six lipid-dependent and one nonlipid-dependent species. The lipid-dependent yeasts are represented by *M. furfur*, *M. globosa*, *M.obtusa*, *M. restricta*, *M. slooffiae* and *M. sympodialis*. However, new lipid-dependent species have been recently identified, including *M. japonica*, *M. yamatoensis*, *M. dermatis* and *M. nana*; the latter two are closely related to *M. sympodialis*. (Ordeix et al., 2007)

*M. pachydermatis*, the nonlipid-dependent yeast, has been considered to be a zoophilic yeast because it is frequently isolated from wild and domestic animals, particularly dogs and cats. In dogs and cats, Malassezia pachydermatis colonizes the skin soon after birth, and is the primary yeast species associated with skin and ear disease. Malassezia are part of the normal cutaneous flora on healthy dogs and cats, with the principal carriage sites being the mucocutaneous areas, ears and interdigital regions. But in some cases, they can grow and reproduce in abnormal numbers and result in clinical disease. Predisposing factors for *Malassezia* spp. overgrowth on feline skin are unknown. (Hnilica and Patterson) In a retrospective study, the presence of *Malassezia* spp. on histopathological cutaneous sections was frequently related to thymoma-associated dermatitis and paraneoplastic alopecia. In addition, *Malassezia* spp. have been more frequently isolated from healthy ear canals and skin in feline leukaemia (FeLV)- or feline immunodeficiency virus (FIV)-infected cats than in those noninfected. Based on these findings, *Malassezia* spp. overgrowth in cats is reported as a marker of serious, underlying diseases, including retrovirus infection and neoplasia. (Mauldin, Morris, and Goldschmidt, 2002) However, *Malassezia* spp. overgrowth has been described also in feline localized benign exfoliative skin diseases, such as chin acne and the idiopathic facial dermatitis of Persian cats (Bond,

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Curtis, Ferguson, Mason, and Rest, 2000). The most common symptom of Malassezial dermatitis in cats are hair loss, chin acne, redness, and seborrhoea (Tresamol, 2012).

## CASE

A castrated male 4 -years-old Chinchilla cat presented with a complaint of hair loss and skin lesions on ears, face, forearm and abdomen. There are no other cats in the household. She is up-to-date on her vaccines and is fed with a high quality, nutritionally balanced, commercial diet. She had no history of medical disease.The owner realised hair loss on her forearm 2.5 months ago. She had two shots of Biocan-M (Micamfin®) in another veterinary clinic.

***Figure 1.*** *Ears of the cat, Hyperkeratosis*

***Figure 2.*** *Ventral abdomen, erythema.*

On clinical examination areas of alopecia with change in the color, erythema, desquamation and seborrhoea were observed (Figure1, Figure 2). Ectoparasitic infestation was ruled out by dermatological examination. Ultraviolet (Wood's lamp) examination were positive. Cat referred for evaluation of *Malassezia* spp. overgrowth using the tape strip method. A piece of clear acetate tape was applied successively to lesional skin, two to three times. Sample was stained using Diff-Quick® (Tıp-Kimsan, Turkey) and placed on a glass slide for microscopic examination. Several random fields of each slide were examined at 40X magnification. *Malassezia* spp. was established (Figure 3).

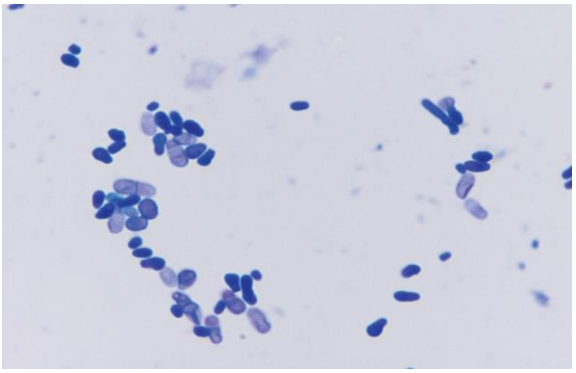

***Figure 3.*** *Cytologic appearance of Malassezia species (100×).*

Routine serum biochemical parameters were in normal ranges. Haematological parameters were normal with exception of a slight monocytosis at 1.6 $10^9$/l (normal ranges, 0.2:1.0 $10^9$/l) (Eos vet, Veterinary Heamotolgy Analiser Exigo, Sweden).

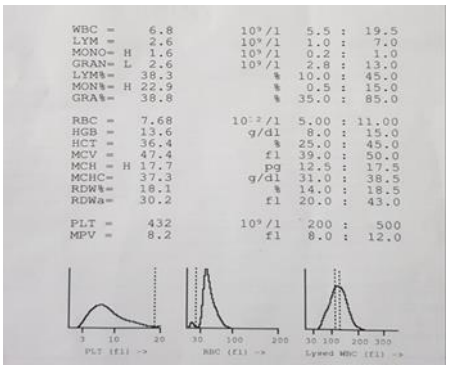


***Figure 4.*** *CBC results.*

At general anesthesia, two punch biopsies were taken from face, in front of ears and sent to the laboratory (Destek Veteriner Patoloji Laboratuvarı, Ankara). Convenia® (Zoetis) was used as protective antibiotherapy. The results from laboratory confirmed the acetate tape method (Figure 5, Figure 6).

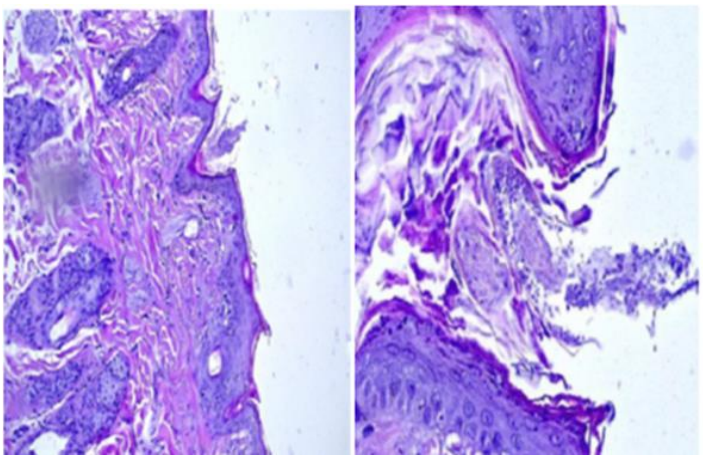

***Figure 5.*** *Section from a skin specimen of a cat, Malasseziasis.*
***Figure 6.*** *Section from a skin specimen of a cat, Hyperkeratosis.*

The cat was treated with Terbinafine HCL (30 mg/Kg BW, for a month), Megaderm® (Virbac) sachet orally (daily, for two weeks) and topical application of Ecosin® (BARD, Czech Repulic) (once in a week) for a period of three weeks. The condition of the animal improved by tenth day and it was advised to continue treatment for three more weeks.

## DISCUSSION

In cats, generalized Malassezia dermatitis remains extremely rare. In cats, Malassezia overgrowth has since been associated with retroviral infections, paraneoplastic syndromes, thymoma, and diabetes mellitus. (Godfrey, 1998) In a retrospective study, it was evaluated that presence and importance of Malassezia yeasts in feline skin biopsy specimens (Maudlin et al., 2002). Based on these findings and the descriptions of the present study, Malassezia overgrowth should be considered as a marker of life-threatening, underlying diseases in cats. Malassezia yeasts have also been associated with feline acne and idiopathic facial dermatitis. Atopic dermatitis has been described as a common predisposing factor for Malassezia dermatitis in dogs, whereas this association has been reported less frequently in cats. In a series of 18 allergic cats with Malassezia spp. overgrowth, atopic dermatitis was diagnosed in 16 animals. All the cats were otherwise healthy and those tested were free from retroviral infections. The beneficial effects of azole antifungal therapy alone in five out of seven of these cats led the authors to conclude that Malassezia yeasts can exacerbate the clinical signs of allergy in cats as well as in dogs. Two out of six cases of the present report were associated with cutaneous food adverse reaction, and topical antifungal therapy was useful. In atopic animals, cutaneous lesions related to Malassezia overgrowth commonly occur on the face, ventral neck, abdomen and ear canals (Ordeix et al., 2007). The factors involved in the transition, from commensalism to parasitism, by Malassezia yeasts in cats are not fully understood (Crosaz et al., 2013).

Malassezia yeast normally colonize the skin and external ear canals of animals in very low numbers, but in a diseased state, alterations to the skin contribute to increased susceptibility to infection. Alteration in surface lipids, increased moisture and humidity, increased staphylococcus numbers and/or disruption of the stratum corneum barrier function encourages overgrowth of the yeast organism. Primary diseases that can cause these changes include endocrine disorders, allergic disease, parasitic disease, metabolic disease (ex. superficial necrolytic dermatitis in dogs), and thymoma-associated dermatoses in cats.

In this case, owner of the cat didn't let us to perform more tests to find the underlying reason. Again, to achieve a good clinical response to treatment, all efforts should be made to identify and correct the predisposing factors (allergy, hormonal disturbances, neoplasia, immunedeficiencies, etc).

## ACKNOWLEDGMENTS

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