EXCELLENCE IN DERMATOLOGY™

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CLINICAL KNOWLEDGE INSIGHTS

FUNGAL & YEAST DERMATOSES

MALASSEZIA DERMATITIS

Clinical Knowledge Insight created by **Jennifer Pendergraft, DVM, DACVD**

CONTENTS

AT A GLANCE

- A superficial epidermal overgrowth of the commensal yeast, *Malassezia* pachydermatis.
- A common diagnosis in dogs, uncommon in cats, but possibly under diagnosed in this species.
- Other species in the genus *Malassezia* are recognized commensals of dogs and cats, but appear to be much less frequently involved in dermatitis.
- *Malassezia* dermatitis develops secondarily to allergic, endocrine, conformational, and keratinization disorders and rarely develops due to immunocompromised status.
- Increased warmth and humidity of the environment and protected cutaneous microenvironments, such as skin folds and ear canals, appear to be predisposing factors for *Malassezia* colonization.
- *Malassezia* is not an invasive organism and remains confined to the stratum corneum. Enzymes produced by *Malassezia* stimulate pruritus and inflammatory changes.

- Hypersensitivity to *Malassezia* is considered to be a significant potential contributor to pruritus and may occur more frequently in dogs and cats with atopic dermatitis, as it does in atopic humans.
- Concurrent overgrowth of *Staphylococcus* species is common.
- Basset hounds, West Highland white terriers, and American cocker spaniels are over-represented, as well as Devon rex and sphinx cats.

WHAT DOES IT LOOK LIKE?

CLINICAL SIGNS ARE NON-SPECIFIC AND MAY INCLUDE:

- Pruritus
- Malodor
- Erythema
- Scale
- Greasy or waxy skin debris
- Lesions consistent with self-trauma due to pruritus
- Hyperpigmentation and lichenification
- Rust or brown pigmentation of hair or proximal claw (with claw fold involvement)
- Feline chin acne

COMMON LOCATIONS INCLUDE:

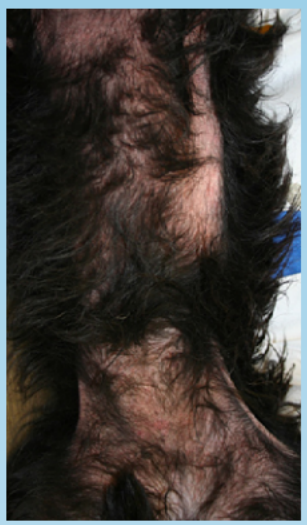
- Ear canals
- Lip margins and lip folds
- Axilla
- Groin
- Ventral neck
- Perineum
- Interdigital spaces and claw folds
- Skin folds (e.g., facial folds of English bulldogs and others)
- IMPORTANTLY, *Staphylococcus* infections, and associated lesions, are often concurrently present.

PATHOLOGIC IMAGE LIBRARY : *MALASSEZIA* DERMATITIS

Malassezia otitis externa, secondary to atopic dermatitis (canine)

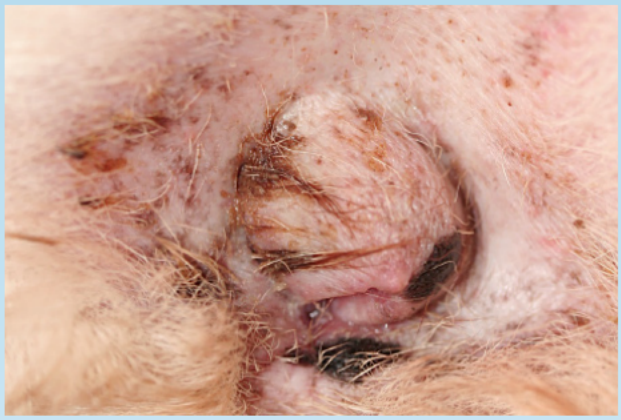
Malassezia otitis externa, secondary to atopic dermatitis (canine)

Lichenification and greasy seborrhea due to atopic dermatitis-related *Malassezia* (canine)



Erythema and greasy seborrhea due to atopic dermatitis-related *Malassezia* (canine)

Erythema with lichenification, and greasy seborrhea due to *Malassezia* (canine)

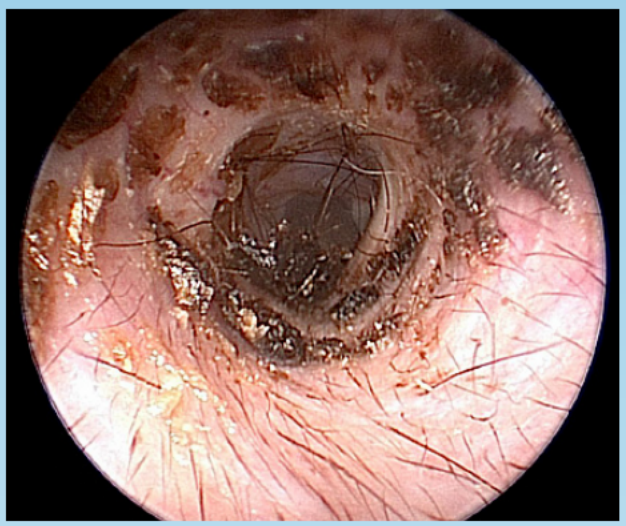


Perivulvar erythema and greasy seborrhea due to *Malassezia* (canine)

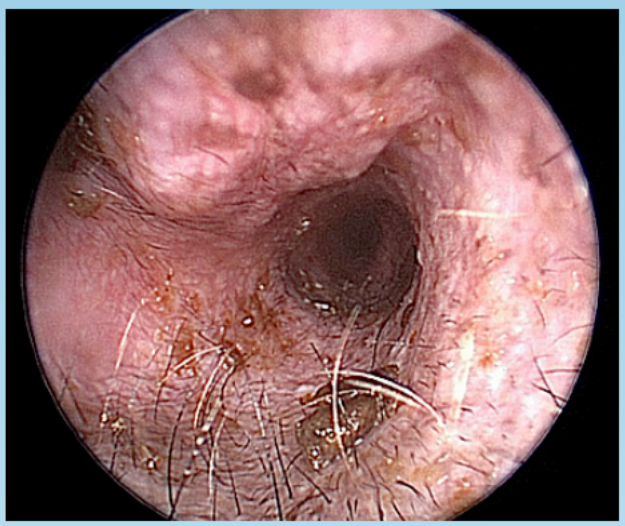
PATHOLOGIC IMAGE LIBRARY : *MALASSEZIA* DERMATITIS

Malassezia claw fold dermatitis (Devon rex cat)

Malassezia pododermatitis in a canine patient (canine)



Malassezia otitis externa secondary to atopic dermatitis (canine)



Malassezia otitis externa secondary to atopic dermatitis (canine)

Malassezia otitis externa secondary to atopic dermatitis (canine)

WHAT ELSE LOOKS LIKE THIS?

- Staphylococcal pyoderma
- Demodicosis
- Dermatophytosis
- Cheyletiellosis
- Sarcoptic mange
- Canine hypothyroidism
- Hypersensitivity syndromes: flea-bite hypersensitivity, cutaneous adverse food reaction, atopic dermatitis and contact hypersensitivity
- Primary keratinization disorders
- Epitheliotropic cutaneous lymphoma
- IMPORTANTLY, *Malassezia* dermatitis may be concurrently present with the aforementioned differential diagnoses.

HOW DO I DIAGNOSE IT?

- Diagnosis is confirmed via cutaneous cytology.
- Although malodor is a common feature, its presence or absence may be misleading. Cytological evaluation is strongly recommended.
- Numbers of *Malassezia* organisms are variable:
  - → A finding of greater than 3 yeasts per high power oil immersion field is significant in the presence of suggestive clinical signs.
  - → Clinical signs may be present with fewer numbers of yeast in some individuals.
- Positive reactions to intradermally-injected *Malassezia* antigen or elevated levels of *Malassezia*-specific IgE support the diagnosis of *Malassezia* hypersensitivity in pruritic patients with *Malassezia* overgrowth. These diagnostics are not routinely performed and not required for diagnosis.

CUTANEOUS CYTOLOGY VIDEOS: ExcellenceInDermatology.com → Education Library → Videos

CUTANEOUS CYTOLOGY SECTION: ExcellenceInDermatology.com → Diagnostic Techniques

HOW DO I MANAGE IT?

- Treatment involves management of the underlying condition as well as topical and/or systemic antifungal therapy.
- Recheck with repeat cytology should be performed 1-3 weeks after initiation of therapy and approximately one week beyond clinical and cytological cure.
- The typical treatment duration is 3-4 weeks.

TOPICAL THERAPY

- Topical therapy is indicated in all cases of *Malassezia* dermatitis and should be utilized in conjunction with systemic therapy for generalized presentations.
- Shampoo therapy is ideally performed 2-3 times weekly. Shampoos should be continued until resolution, and can be maintained weekly to prevent recurrence. A minimum of 10 minutes is a suggested contact time.
- Effective active ingredients include: ketoconazole 1-2%, miconazole 2%, chlorhexidine 2-4%, benzoyl peroxide 2.5%, and selenium sulfide 1%.
- Sprays and wipes containing acetic acid 2% and boric acid 2%, chlorhexidine 2-4%, miconazole 2%, or ketoconazole 1-2% may be used every 24-48 hours until resolution, and can be maintained 1-2 times weekly to prevent recurrence.
- Leave-on rinses with the following active ingredients may be utilized as a sole or adjunct topical treatment: acetic acid 2%, ketoconazole 1-2% miconazole 2%, and chlorhexidine 2-4%. A white vinegar and water (1:3) solution may be utilized as an acetic acid leave-on rinse.
- Focal, dry presentations may be treated with daily applications of antifungal lotions, ointment, or creams.
- Active ingredients include: clotrimazole 1%, miconazole 1-2%, terbinafine 1%, thiabendazole 4%, amphotericin B 3% and nystatin.

SYSTEMIC (ORAL) THERAPY

- Systemic antifungal treatment is recommended for patients with generalized or multifocal *Malassezia* colonization and can be used as a sole therapy when compliance with topical therapy is poor.
- Systemic therapy is selected empirically. Culture and sensitivity of *Malassezia* is not routinely performed by laboratories, and reliable, reproducible susceptibility breakpoints are yet to be established and correlated with clinical efficacy.
- The typical treatment duration is 3-4 weeks. Recheck is recommended to assess for clinical and cytological response.
- Ketoconazole and itraconazole should be given with food to optimize absorption.
- The azole class of antifungals may induce hepatotoxicity and should be avoided or used with caution in patients with hepatotoxicity. Many drug interactions with this class are possible and concurrent medications should be assessed. For prolonged use of the azole class antifungals, a serum biochemistry profile is prudent to assess for hepatotoxicity.
- Vasculitis and cutaneous ulcers may develop in 7.5% of dogs treated with itraconazole at doses >10 mg/kg.

SYSTEMIC (ORAL) ANTIFUNGAL TREATMENT COMPARISON FOR *MALASSEZIA* DERMATITIS

MEDICATION	DOSE
Ketoconazole	5-10 mg/kg PO q 24 hours
Itraconazole	5-10 mg/kg PO q 24 hours or 2 consecutive days per week
Fluconazole	10 mg/kg PO q 24 hours
Terbinafine	30 mg/kg PO q 24 hours or 2 consecutive days per week

IMMUNOMODULATION

- *Malassezia* antigens may be included in immunotherapy preparations for patients with treatment of atopic dermatitis. At present evidence for efficacy of immunotherapy in patients with suspected *Malassezia* hypersensitivity is lacking.

COMMENTS

- The most common causes of treatment failure are inadequate treatment duration and failure to control underlying dermatologic disease.
- For patients with atopic dermatitis, topical maintenance therapy, particularly in folds and interdigital spaces, is helpful to prevent relapse and to treat associated pruritus.
- *Malassezia* with in vitro resistance to ketoconazole, fluconazole, and intraconazole has been documented. However, in vivo resistance has not been well-documented.

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