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Satish Kumar Karlapudi
Professor and University Head of
Medicine, P V Narasimha Rao
Telangana Veterinary
University, Rajendranagar,
Hyderabad, Telangana, India

Diagnosis and management of *Malassezia* otitis in dogs

Satish Kumar Karlapudi

Abstract

Otitis is one of the most common conditions among dogs and the condition can be caused by both bacterial and fungal origin. In the present study, 62 dogs were presented with signs suggestive of ear infection and on microscopic and cultural studies 18 dogs were diagnosed for *Malassezia pachydermatis* as the primary etiological agent. These dogs were showing the signs of erythema, mild edema with dark coloured wax or ear discharge. The yeast were diagnosed base on specific feature; blue coloured foot print shaped organisms on stained smear. Whereas, white or creamy coloured colonies, that turned to orange-beige and finally dark tan to brown were noticed on SDA media. Following treatment with oral ketoconazole @ 5mg/kg, for 20 days showed marked improvement with complete resolution of signs.

Keywords: *Malassezia* otitis, diagnosis, management, canine

Introduction

Canine otitis is inflammation of a dogs ear; otitis externa being a chronic inflammation of external ear canal and whereas, otitis media, is inflammation of middle ear. The condition is characterised by erythema, pruritus and a discharge of different colour and varied viscosity along with odour. It is caused by various etiology viz., bacteria, fungi, parasites and yeast, of which otitis caused by the yeast, *Malassezia* spp is more challenging to a veterinarian as it cannot respond to routine medical procedure^[8] The present paper puts on record about the clinical signs, diagnosis and management aspects of *Malassezia* associated otitis in dogs.

Materials and Methods

Dogs of various breed, age and sex that were presented to Teaching Veterinary Clinical Complex (polyclinic), Warangal of P V Narasimha Rao Telangana Veterinary University during two years ie., the period from Jan' 2014 to Dec' 2015, with the history of frequent shaking, scratching of one or both the ears, erythema, discharge and odour from ears were considered for the present study and were subjected for detailed clinical examination and thorough physical examination. Later, sterile swab was used to collect sample from the affected ears which were examined under microscope after proper staining and another sample was subjected for cultural examination. Based on the etiology identified, the dogs diagnosed for *Malassezia* associated otitis were selected and subjected for therapy using oral ketoconazole @5mg/kg, once a day, for 20 days along with other supportive drugs. However, all the other otitis cases that were diagnosed for various etiology were also treated for respective period, but not considered for the study.

Results and Discussion

A total of 62 dos of different breed, age and gender were presented with the history and signs of scratching of ears, shacking of head with occasional tilting for varied period. Five of these were also reported to be showing the signs of going in circles. Close clinical examination revealed erythema and edema of ear pinna with foul odour and discharge. Few (17/62) were noticed with ear canal filled with dirt and thickened wax and 09 of the 62 were shown signs of dermatitis viz., pruritus, alopecia, dry scabby lesions. Samples from the affected ears were collected using sterile swabs, transferred to sterile glass slide and stained to examine under microscope. However, one more swab was also transferred to nutrient broth and few selected samples particularly dogs showing blackish-brown discharge / wax (fig. 1) were transferred to Sabouraud Dextrose Agar (SDA) with Chloramphenicol (0.05%) and Potato dextrose agar (PDA). Later, these (SDA and PDA) plates were incubated for 48 h at 37 °C in air supplemented with 5% CO₂, to observe the growth and to study the colony and microscopic morphology of the yeast. Microscopic examination of stained ear sample revealed *Staphylococci*

Correspondence

Satish Kumar Karlapudi
Professor and University Head of
Medicine, P V Narasimha Rao
Telangana Veterinary
University, Rajendranagar,
Hyderabad, Telangana, India

(18/62), *Pseudomonas* (15/62) and mixed infections among 11 of the affected cases. Further, 18/62 (29%) otitis dogs that were suspected for *Malassezia* associated ear infection, revealed blue coloured foot print shaped organisms when stained with diff quick method thus, diagnosed as *Malassezia pachydermatis* (fig. 2). Further, colonies on Sabourauds dextrose agar were first white or creamy in colour (fig. 3) then became buff to orange-beige and finally dark tan to brown by 5-7 days. Whereas, the colonies on Potato dextrose agar were creamy in colour then became friable, shrink and finally (after 4-7days) dark tan to brown. The colonies were round, less convex with wrinkled margins, which were non pigmented on young culture, then became tan to brown. Following treatment with ketoconazole, reduction in signs started from day 5 and complete recovery by day 15-20 among all the *Malassezia* associated otitis cases. Further, topical antifungal ear drops were also used in selected dogs, that were instilled after cleaning the ear debris.



Fig. 1: Black ear wax and discharge in *M. Pachydermatis* ear infection

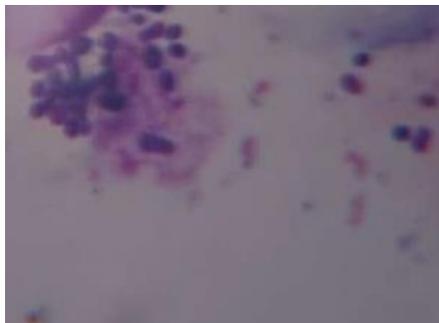


Fig. 2: Blue coloured foot print shaped yeast from otitis cases



Fig. 3: Cream coloured *M. Pachydermatis* colonies on SDA

Otitis externa, the inflammation of ear canal is the most common ear disease of dogs, affecting up to 20% of the dog

population. The external ear canal is similar in structure to the interfollicular epidermis of the skin. It is a stratified cornifying epithelium with adnexal organs, such as hair follicles and their associated sebaceous and ceruminous glands. Therefore, any disease that affects the skin can also affect the external ear canals [8]. The condition has a multifactorial etiology, however, it is predominantly a microbial infection that is manifested by exudates, erythema, oedema, offensive odour and pruritus [9]. *Malassezia* spp are normal commensals and occasional pathogens of the cutaneous flora of dog and cat and a prevalence of canine otitis cases was up to 40% and with a higher prevalence (67.74%) of *M. pachydermatis* [2]. In the present study, the prevalence of *Malassezia* associated otitis was 29%, that was in agreement with the previous authors.

Nearly almost all the ear infections in dog and cat include commensal (*Staphylococci* and *Malassezia*) or environmental (*Pseudomonas*) pathogens which are many times opportunistic pathogen. In our study the *Staphylococcus*, *Pseudomonas* and *Malassezia pachydermatis* were the common pathogens identified by different isolation procedures and these findings are in accordance with [3]. True primary pathogens are rare and the vast majority of infections are secondary to pre-existing inflammation, foreign bodies, obstruction or other primary problems [8]. Clinically, ear infections among dogs can be divided into erythroceruminous or suppurative otitis. Erythroceruminous otitis is most commonly associated with *Staphylococcus* or *Malassezia* spp and is characterised by erythema, pruritus and a ceruminous to seborrhoeic discharge and whereas, the common manifestations associated with suppurative otitis is erythema, ulceration, pain and a purulent discharge and is most commonly caused by *Pseudomonas* species [3]. The findings recorded in our present study were in agreement with the said authors.

Malassezia pachydermatis, an opportunistic pathogenic yeast is commonly isolated from auricular canal of dogs and cats, having otitis externa, however, also isolated from dermatitis cases [4]. The yeast *M. pachydermatis* is found in low numbers in the ear canals of many healthy dogs and cats. Because yeasts colonize the surface of the ear canal, they are most easily found adhered to clumps of exfoliated squamous epithelial cells. There is no specific number that indicates yeast overgrowth. The key determining factor is whether the ears are pruritic [1]. In addition, if previous treatment did not include antifungal therapy and if otitis externa is recurrent, *Malassezia* associated otitis is warranted [7]. A dark exudate in the canal usually signals the presence of either *Malassezia* spp or a parasite but may also be seen with a bacterial or mixed infection. Infection with either yeast or bacteria does not occur in a normal ear as the environment inside the external canals of most dogs is sterile. Infection develops because of inflammation produced by primary factors, usually in combination with perpetuating and predisposing factors. As otitis progresses, the inflammation created by primary factors leads to changes in the ear canal leading to modification of the micro-environment and a change in the bacteria population [6].

In recent decades it was reported that the high frequency of multidrug-resistant of the isolated bacteria could become a high risk factor for owners and veterinary professionals. Therefore, a rational policy of antibiotic prescription in order to prevent the selection of resistant strains is needed [3]. Regular treatment at home with disinfecting ear washes

should become part of the pet's grooming-routine with a correct antimicrobial therapy. It has been described a high sensitivity to beta-lactams and aminoglycoside-aminocyclitols for Gram-positive bacteria, while for Gram-negative bacteria has been suggested the use of aminoglycoside-aminocyclitols, polymyxin B and enrofloxacin and whereas, antifungals such as ketoconazole was affective against *Malassezia* [6]. It is important to remember that topical medications are inactivated by exudates and excessive cerumen may prevent medications from reaching the epithelium. The ears should be gently cleaned with an ear cleaner that will remove the debris in the canal. Thick, dry or waxy material requires a ceruminolytic solution /such as carbamide peroxide or dioctyl sodium sulfosuccinate (DSS). If rods are seen, the ear cleaner should contain squalene, because one possible cause is *Pseudomonas*, which can produce a biofilm that protects bacteria from antibiotics. The ears should be thoroughly rinsed with warm water to remove residual ear cleaner [9]. Effective treatment may require both topical and systemic antimicrobial therapy, along with pain medications and glucocorticoids. Successful treatment for chronic or recurrent canine otitis requires that all the underlying factors leading to persistence or recurrence of the otitis are identified and managed. Most cases of acute otitis externa can be managed using polyvalent topical ear products that include a glucocorticoid, an antimicrobial and an antifungal, for *Malassezia*. Manual cleaning is often necessary in cases with large amounts of debris [5]. The duration of treatment may vary from 7–10 days to >30 days, depending on the diagnosis. In treatment of acute bacterial otitis externa, antibacterial agents in combination with corticosteroids reduce exudation, pain, swelling, and glandular secretions. Most commercial topical products contain a combination of antibiotic/antifungal and glucocorticoids. The volume of the ear canal in most dogs is 1 ml and adequate treatment requires instillation of at least this volume twice daily. Yeast infections in dogs can be treated with oral ketoconazole @ 5 mg/kg/day, PO, for 15–30 days [2].

9. Zur GL, Lifshitz B, Bdol Ah-Abr Am T. The association between the signalment, common causes of canine otitis externa and pathogens. *Journal of Small Animal Practice*. 2011; 52:254-258.

References

1. Bond R. Superficial veterinary mycoses. *Clin Dermatol*, 2010; 28(2):226-236.
2. Bugden DL. Identification and antibiotic susceptibility of bacterial isolates from dogs with otitis externa in Australia. *Aust Vet J*. 2013; 91(1–2):43-46.
3. Griffin CE. Classifying cases of otitis externa the PPSP System. *Proceedings of ESVD Workshop on Otitis*. St Helens, 2010.
4. Nambi AP. *Malassezia* dermatitis in dogs. *Intas Polivet*. 2002; 3:202-205.
5. Nardoni SM, Corazza F. Mancianti Diagnostic, clinical features of animal malasseziosis. *Parassitologia*, 2008; 50(1–2):81-83.
6. Petrov VG, Mihaylov I, Tsachev G, Zhelev P, Marutsov K. Otitis externa in dogs: microbiology and antimicrobial susceptibility. *Rev Med Vet*, 2013; 164(1):18-22.
7. Reddy CBK, Kumari KN. Therapeutic management of *Malassezia* dermatitis in a Labrador retriever dog. *International Journal of Livestock Research*, 2015; (7):92-95.
8. Zamankhan H, Malayeri S, Jamshidi T, Zahraei S. Identification and antimicrobial susceptibility patterns of bacteria causing otitis externa in dogs. *Vet Res Commun*. 2010; 34:435-444.