New Treatment of Malassezia Otitis Externa In Dogs

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Though not a life-threatening ailment, otitis externa can be a frustrating disease for canine patients and their owners. An estimated 15-20 percent of canine patients and as many as seven percent of feline patients have ear disease.[1,2] Clinicians and patients could benefit from a ready treatment for otitis externa.

In addition to treating the ear, clinicians must consider that most ear diseases have an underlying mechanism responsible for inciting the disease. Dermatologists frequently refer to primary causes and predisposing and perpetuating factors when considering diagnostics and therapies for ear disease.[1,2] Primary causes of otitis include parasites, hypersensitivity, keratinization disorders, foreign bodies, ear gland disorders and autoimmune diseases. These conditions are responsible for altering the ear canal to allow for abnormal colonization of microorganisms. Treatment of these underlying conditions cannot be overlooked in the eventual resolution of otitis.[3] Predisposing factors include such conditions as pendulous pinnae, stenosis, neoplasms, hair in the ears, excessive cerumen production, trauma and high humidity.

Perpetuating factors include bacteria (primarily *Staphylococcus* spp. and *Pseudomonas* spp.); yeasts (primarily *Malassezia* spp.); and pathologic changes, such as glandular hyperplasia, epithelial folds, neoplasia, edema, mineralization and fibrosis. Secondary otitis media often perpetuates otitis externa. These conditions are frequently seen as the "cause" of the ear infection, when in actuality they are sequelae to an underlying primary cause.

> At pH 4.9, the acetic acid/ boric acid solution may inactivate the chemoattractant and account for the rapid reduction in inflammation and pruritus. Boric acid, being hydroscopic, dries out the humid ear canal and may also interfere with the function of this hydrophilic chemoattractant cytokine by removing the moisture necessary for it to function. It is interesting that during the week of no treatment, the Malassezia organisms remained absent from the ear cytology.

Malassezia pachydermatis (syn. *Pityrosporum canis*) is a common commensal organism of the anal sacs, anus, auditory canal and skin of dogs. The lipophilic, oval, budding yeast is a common etiologic agent in canine otitis externa and may be found in as many as 36 percent of normal canine ear canals. Factors favoring its growth include abnormal levels of ceruminous lipids, high humidity and abnormal cell-mediated immunity. Alterations in normal microflora in the ear and skin from prior or concurrent antibiotic therapy may play a role as predisposing factors in allowing the overgrowth of *Malassezia* organisms.[4]

Treatment of *Malassezia* otitis externa involves careful cleaning of the external auditory canal and removal of lipid substrates necessary for the organisms' growth and reproduction.[3] Numerous ear cleaners commercially available to veterinarians contain a variety of ingredients, such as alcohols, organic acids, propylene glycol, various peroxides and detergents. The authors were unable to find published data to demonstrate that ear cleaners alone can effectively treat symptomatic *Malassezia* otitis externa in dogs.

Searching for an underlying cause of otitis, such as atopy, food allergy, or keratinization disorders, may prove beneficial in identifying primary causes. Therapies for these underlying causes may require long periods of time to be effective. Topical agents are useful to shorten the course of *Malassezia* otitis externa, but no preparation has become widely accepted for such therapy. Empiric use of various ear cleaners has always been recommended in the treatment of otitis externa to remove otic exudates and allow topical medications to contact the diseased epithelium.

Chronic *Malassezia* otitis externa frequently involves a number of pathologic conditions that result in hyperplastic cerumen glands, cerumen gland rumors, polyps, chronic fibrosis, otitis media and ear canal anatomical variations, all of which preclude effective ear canal hygiene.

Human studies investigating treatment of otomycosis and vaginal yeast infections have revealed the usefulness of boric acid. One study reported that after three weeks of a four percent boric acid treatment for otomycosis, there was a 100 percent cure rate.[5] Another study reported a 95 percent cure rate for vaginal yeast infection through the use of boric acid vaginal suppositories.[6] To date, no