Characterization of Canine *Pseudomonas* spp Otitis

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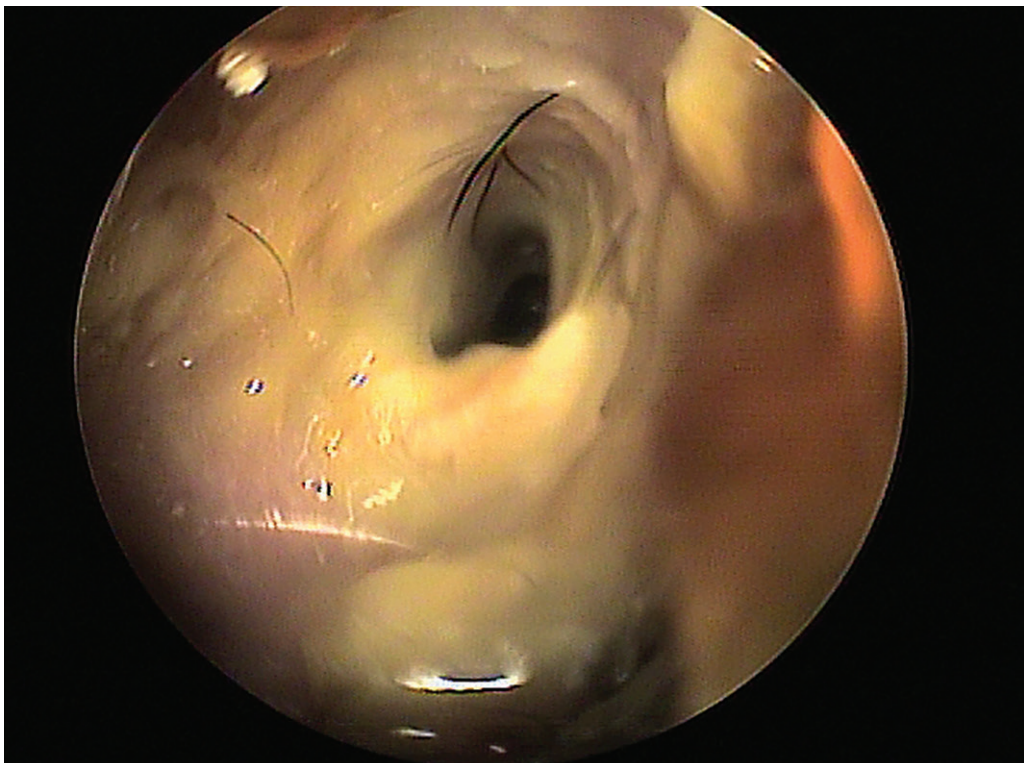
In the Literature

Morris DO, Davis MF, Palmeiro BS, O'Shea K, Rankin SC. Molecular and epidemiological characterization of canine *Pseudomonas* otitis using a prospective case-control study design. *Vet Dermatol.* 2017;28(1):118-e25.



▲ **FIGURE 1** Otitis externa resulting from *Pseudomonas aeruginosa* infection. Severe biofilm formation, often seen with this organism, is present.

FROM THE PAGE ...

Pseudomonas aeruginosa, which is commonly isolated in otitis cases, is not considered to be a normal organism found in healthy canine ears. The bacterium is most commonly found in contaminated water sources such as pools, saunas, and drinking water[1]; however, nosocomial infections have also been noted in the human healthcare field.[2-4]

This prospective, observational case-control study aimed to evaluate and potentially identify environmental and nosocomial risk factors associated with canine *P aeruginosa* otitis.

Seventy-seven dog–household combinations were included in the study population: 38 dogs were identified as cases with culture-confirmed *P aeruginosa* otitis, and 39 controls had otitis due to bacteria other than *P aeruginosa*. After instruction on proper collection technique, pet owners collected swab samples from various items in their home as well as oral swabs from themselves and any other dogs or cats in the household. Additionally, a 22-question survey was completed to help identify any potential risk factors for community acquisition. Molecular typing was performed on all isolates to determine clonal relatedness of the various samples submitted.

History of visiting a dog park or swimming in a pool was independently associated with a 64% increase in prevalence of being a *Pseudomonas* spp case.

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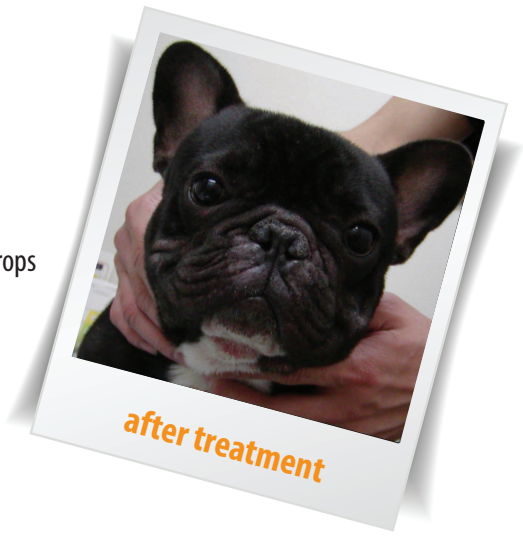

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The study found that, as suspected, in most cases of *P aeruginosa* otitis, the isolates found in the ears were genetically homologous to those found in household water sources or in the oral cavity of human or animal housemates. Additionally, a high proportion of dogs with typable *P aeruginosa* otic isolates had clonal strains isolated from their own mouth. In a multivariate analysis of potential risk factors, history of visiting a dog park or swimming in a pool was independently associated with a 64% increase in prevalence of being a *Pseudomonas* spp case.

… TO YOUR PATIENTS

Key pearls to put into practice:

1. The importance of personal and environmental hygiene cannot be ignored when discussing management of *Pseudomonas* spp otitis cases. The potential for cross-contamination between housemates, both human and animal, as well as shared objects, particularly those with water involved, should be stressed to owners.
2. Care should be taken with particular medical devices such as otoscope cones and community ear cleaner bottles to avoid nosocomial infections in the veterinary hospital.[5]
3. A complete history should be taken for each patient to help identify any possible risk factors (eg, swimming, visiting dog parks) that could contribute to otitis development.

Reference

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