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Therapeutic Management of Otitis Externa in Dogs

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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Case Study

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ABSTRACT

A one year old male German shepherd dog was presented to Veterinary Clinical Complex, College of Veterinary and Animal Science, Navania, Vallabhnagar, Udaipur with the history of head shaking, tilting of the head towards the affected side, foul smell and excessive amount of cerumen coming out from the ear. Clinical manifestation revealed that the dog showed pain while touching the affected area. The cerumen sample from ear was taken and culture test was done. The culture test report revealed the presence of *Proteus spp*. The dog was treated successfully with the ear cleanser containing 0.2 percent salicylic acid, pomisol ear drop and tablet gentamicin (orally).

Keywords: Otitis externa; dog; proteus spp.; gentamicin.

1. INTRODUCTION

"Otitis externa is one of the most common and multifactorial disorders, accounting for up to 10 to 20% of discourse in canine practice" [1,2]. "The etiological factors of otitis externa can be described as predisposing factors, primary factors, perpetuating factors and secondary causes with predisposing factors. Primary factors have a direct effect on the skin of the ear canal. Predisposing factors are those components that directly change the microclimate in the ear canal" [3,4]. "It is a broad term for a disease state that happens

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when the layer of cells that line the external ear canal becomes inflamed. It can vary from discomfort and mild inflammation to a life-threatening disease. The clinical signs may include any combination of head shaking, odour, pain on manipulation of the ear, exudate and erythema" [5]. "Numerous causative agents have been associated with otitis externa, but bacterial organisms are one of the most important ones. So far, different species of bacteria have been isolated from dogs with otitis externa viz., *Staphylococcus, Streptococcus, Pseudomonas, Proteus*, and *Escherichia coli* were the most prevalent isolated bacteria" [6,7]. "Practically treatment of otitis externa could be performed by ear cleaning, topical administration of anti-inflammatory and antimicrobial agents" [6,8]. Topical therapy is especially beneficial because drugs attain their highest concentrations with the fewest systemic effects [6]. "The goals of this study were to find bacteria involved in otitis externa and their antimicrobial susceptibility pattern and compare them with morphological and staining properties of prepared smears from secretions of the ear canal to assist clinicians in successful therapeutic management" [9].

2. CASE PRESENTATION

A German Shepherd dog was presented to VCC, CVAS, Navania, Udaipur with the symptoms of head shaking, itching of ear, presence of abnormal secretions, redness of the auricle and external ear canal, pain on palpation of the ear and malodorous ear. Ear exudates samples were obtained by inserting sterile swabs to the junction of vertical and horizontal external ear canal. The otic exudates were collected from the dog as per the method described by Wilkinson and Harvey [10]. The collected sample was subjected to culture examination. The *Proteus mirabils* was identified on the basis of swarming growth on blood agar and primary and secondary isolation of bacteria as described by Markey et al., [11].

2.1 Antimicrobial Susceptibility Testing

The antimicrobial susceptibility patterns of isolated bacteria were determined by disk diffusion method using Mueller– Hinton agar (Oxoid Ltd, UK). The inhibitory zone diameters were measured around the antibiotic disks after incubation for 24 h at 37^0 C. Different antibiotics were used (Hi-Media, Mumbai) in the study viz., Ampicillin-Sulbactum (10/10 mcg), Ciprofloxacin (10 mcg), Cephotaxim (30 mcg), Doxycycline (30 mcg), Gentamicine, (10 mcg) and Oxytetracycline (30 mcg) to determine the resistance patterns of bacterial pathogens isolated from otitis externa affected dog.

Fig. 1. Sample collection from the ear of affected dog

3. DISCUSSION

Ear disease is one of the most common disease complain observed in the dogs and it can be caused by bacterial or fungal species. In the present case, the *Proteus mirabilis* was isolated from the ear of affected dog. The similar findings were also reported by Kwon et al., [12].

The swab sample from the ear of a dog was found positive for the *Proteus mirabilis* on the basis of culture and biochemical characteristic. On analyzing the antibiogram of *proteus mirabilis*, it was observed that gentamicin was effective for the bacterial isolate and rest of the all five antibiotics showed resistance to the *Proteus spp.* The dog was treated with tablet gentamicin orally and topically along with cleaning of ear by Epiotic cleanser biweekly and 3-4 drops of Pomisol in the affected ear and prednisolone acetate for two weeks.

After the therapy, the dog showed the remission of symptoms and recovered successfully in two weeks. It underlined on the importance of considering the results of the microbiological and antibiotic sensitivity tests to decide a suitable antibiotic therapy.

4. CONCLUSION

Otitis externa is most prevalent disease of dogs caused bacterial species. In the present study

Proteus spp was isolated from the affcetd ear of dog and successfully treated with Gentamine anitibiotic which is found sensitive by antibiotic suceptibilty test.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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