

## HEAD TILT ASSOCIATED WITH MIXED INFECTION OF COCCI AND *MALASSEZIA PACHYDERMATIS* OTITIS AND PERIPHERAL VESTIBULAR DISEASE IN DOGS: DIAGNOSIS AND MANAGEMENT

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Received: 09.01.2018; Accepted: 03.11.2018

### SUMMARY

Otitis externa is a common clinical problem in canines characterized by inflammation of pinna and epithelium of external ear canal. One 2 year old female Beagle, two 4 year old male Pug dogs and one six year old male Labrador retriever dog were presented to Teaching Veterinary Hospital of GADVASU, Ludhiana with the history of head shaking, itching on ears and head tilt, respectively. On the basis of history, clinical signs, otoscopic examination, radiographic findings and ear swab cytology, mixed infection of cocci and *Malassezia pachydermatis* was made in 3 cases and peripheral vestibular disease in Labrador retriever dog. Treatment was done with antibiotic and antifungal in three cases and combination of meclizine and antibiotic in Labrador retriever.

**Key words:** Head tilt, *Malassezia pachydermatis*, Otitis, Peripheral vestibular disease

Otitis externa is an inflammation of pinna and the epithelium of external ear canal. It is a very common clinical problem having multifactorial etiology, including fungi, yeasts, parasites and bacteria (Kiss *et al.*, 1997). Yeast (*Malassezia pachydermatis*) is the most common organism associated with otitis externa (Hallu *et al.*, 1996). The most commonly observed clinical signs in otitis externa are pain, itching, redness, tilting the head, anorexia, incoordination, and occasional vomiting suggestive of progression to otitis media or otitis interna.

One two year old female Beagle, two 4 year old male Pug dogs were presented to Teaching Veterinary Hospital of GADVASU, Ludhiana with the history of head shaking, itching on ears, ear scratching, pinnal erythema, ear scaling/ crusting, head tilt towards affected side (Fig.1) and reduced feed intake. Physical examination revealed normal rectal temperature, normal heart rate and respiration rate, redness and crusts on the inner side of ears (Fig. 2), pain on handling and ear discharge. Otoloscopic examination revealed purulent exudate, excessive aural discharge, thickening of skin lining of the ear canal and foul odour. Cytological Examination of ear swabs smears showed significant number of small bottle shaped, or peanut shaped yeast cells which were identified as *Malassezia pachydermatis* (Fig. 3). The swabs collected were transferred into the Sabouraud's dextrose broth containing chloramphenicol and incubated at 37°C for 24-48 hours. The broth culture was streaked onto the Sabouraud's dextrose agar and was incubated at 37°C for 1 to 7 days. Cell morphology was seen by Gram staining of the smears made from colonies. Dorso-ventral radiographic examination of head didn't reveal any abnormality.

A six year old male Labrador retriever dog was presented with history of head tilt, reduced feed intake and vomiting. Physical examination revealed normal rectal temperature, normal heart rate and respiration rate. There was no loss of proprioception, no deficit of facial and cranial nerves. But there was pus or discharge from ear canals and palpation of the region of the osseous bullae, temporo-mandibular joint, and neck area revealed severe pain. Dorso-ventral radiograph of head revealed reduced air density in ear canal (Fig. 4).

On the basis of history, clinical signs, otoscopic examination, radiographic findings, and ear swab cytology revealing *Malassezia pachydermatis* along with Gram +ve cocci, the diagnosis of otitis externa caused by mixed infection of cocci and *Malassezia pachydermatis* was made in 3 cases. However, in Labrador Retriever, on the basis of history of head tilt, clinical signs of ataxia, vomiting, radiographic findings, ear swab culture indicating staphylococcal infection causing otitis which probably has extended to internal/ medial ear producing signs of peripheral vestibular disease.

All the three dogs with otitis externa due to *malassezia* infection were treated with Ketoconazole @ 10 mg/kg b.wt. bid, Enrofloxacin @ 5 mg/kg b.wt. bid and ear drops (Ofloxacin 0.3% and Clotrimazole 1%, Betamethasone dipropionate 0.025% and Lignocaine hydrochloride 2%). The Labrador dog with peripheral vestibular disease was treated with Meclizine @ 1 mg/kg b.wt., Enrofloxacin @ 5 mg/ kg b.wt. bid, syrup Meloxicam @ 0.25mg/kg b.wt. bid and ear drops. The vomiting in this dog was controlled with a combination of Cinnarazine (20 mg) and Domperidone (15 mg) @ ½ tablet po bid for one week, Dextrose saline @ 20 ml/kg b.wt.

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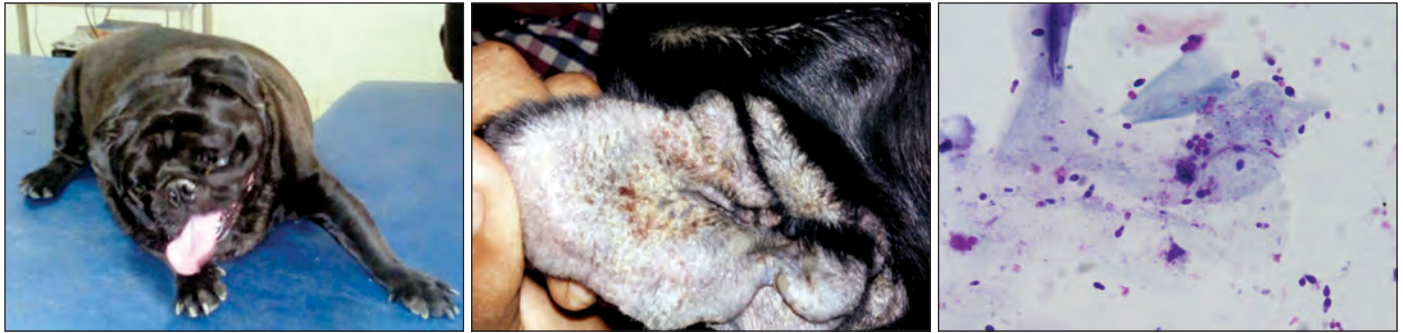


Fig. 1. Head tilt towards right side; 2. Thickening and crusts on pinnae ; 3. Impression smear showing *Malassezia pachydermatis* (100X)



4. Head tilt due to peripheral vestibular disease



Fig. 5. Reduced air density in left ear canal

alongwith Ranitidine @ 2.0 mg/kg b.wt. im for 4 days.

Otitis externa was characterized by frequent head shaking, head tilt, scratching, and excessive aural discharge in all the three dogs (2 Pugs and one Beagle) of present study. The *M. pachydermatis* is an opportunistic pathogen of the normal external ear canal of dogs and were found in significant number (7 per field) in present study which is suggestive of its association in development of otitis externa (Nascente *et al.*, 2004).

Head tilt is the most consistent sign of unilateral vestibular dysfunction. This occurs due to the loss of antigravity muscle tone on one side of the neck. Peripheral vestibular lesions cause a head tilt towards the side of the lesion. The Labrador retriever of present study also showed head tilt toward left side due to infection in left ear canal. The occasional vomiting asseen in Labrador also indicated involvement of peripheral vestibular system. However, no loss of proprioception, no deficit of facial and cranial nerves, no head tremors or hypermetria ruled out the involvement of central vestibular system and further supported the clinical suspicion of involvement of peripheral vestibular system (Varshney *et al.*, 2008). It has been reported that up to 50% of cases of peripheral vestibular disease are due to otitis media-interna. Infection of the middle ear can cause vestibular disease due to the

production and spread of bacterial toxins into the inner ear. The bacteria commonly responsible for this disease are *Staphylococcus* spp., *Streptococcus* spp., *E. coli* and *Pseudomonas* spp. (Platt, 2009). In present case, staphylococcal infection was identified in left ear canal of Labrador. Positive radiological findings indicating reduced air density (Fig. 5) further confirms chronic infection of ear canal (Nelson and Couto, 2014).

A steroid containing ear drop with combination of antifungal and antibacterial agents was preferred as it eliminates inflammation, reduces pain and normalize the ear's micro environment making it less hospitable for yeast overgrowth (Logas, 2000). Steroids also benefits ears with secondary infections by reducing edema, pain, and decreasing discharge and thus increasing the accessibility of antimicrobials to deeper parts of the ear canal. Therapy in *Malassezia* infection must be directed at both the yeasts and elimination of any detectable predisposing factors. Topical and systemic therapy is both helpful in reducing the populations of *Malassezia*. Therefore systemic therapy was done with ketoconazole as it is the most commonly used drug against *Malassezia* (Scott *et al.*, 2001). Systemic antibiotics are also required for treatment of Gram +ve cocci in association with *Malassezia*. For this reason, dogs were given enrofloxacin at a higher dose rate (10 mg/kg b.

wt.) as recommended by Scott *et al.* (2001). Meloxicam was used as anti-inflammatory and to reduce pain. The vestibule sedative drug meclizine was given for one week to alleviate emesis as recommended by Nelson and Couto (2014). But vomiting was completely controlled by antihistaminic, labyrinthine stabilizer (Cinnarazine) and dopamine antagonist (chlorpromazine or prochlorperazine) (Nelson and Couto, 2014). Hence this combination is recommended to alleviate emesis and vestibular disturbance. The instituted treatment protocol were found effective in management of otitis externa and Peripheral Vestibular Disease and brought complete recovery at the end of 14 days of therapy.

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