

Short Communication

CYTOLOGICAL DIAGNOSIS OF EAR INFECTION OF DOGS

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ABSTRACT: A total no of 35 cases were screened for different affections in the external ear canal of dog which were presented in Veterinary Clinical Complex, West Bengal University of Animal and Fishery Sciences, Belgachia, Kolkata. Samples were collected aseptically and transferred to slides for cytological examination. Based on cytology it was found that 54% were suffering from *Malassezia* infection. Rest animals were showing mixed bacterial infection. This study showed high incidence of *Malassezia* sp. in otitis cases on the basis of cytological findings. Further study could be done to infer the prevalence of external ear infection in and around Kolkata. Cytology might aid to proper diagnosis where animals could be treated accordingly.

Key words: Malassezia, Cytology, Epithelial Cells, Yeast, Foot print.

The canine external ear consists of connective tissue and the skin which form the pinna and external acoustic meatus (Bhavana 2017). Inflammation of skin and adnexal structure of the ear canal which is commonly found in veterinary patients, known as otitis externa. Cytologic examination of external ear is a simple, inexpensive and a rapid test to assist in diagnosis (Adhya *et al.* 2019) and treatment of patient suffering from otitis externa. Sometimes physical characteristics may be misleading and unreliable (Woerner *et al.* 2016). Cytology is an important tool for diagnosis for the evaluation of the type of inflammatory response and potential underlying cause specifically Bacteria or Fungi and Cytology provides a means of determining their overgrowth (Bajwa 2017). Cytology may reliably aid to recheck examination as a means to monitoring and adjusting therapy.

Malassezia yeasts are the normal commensals of canine and feline skin (Smith *et al.* 2015). *Malassezia pachydermatis*, lipophilic yeast, occur as commensals on the oily areas of the skin and ears of the dogs and cats and is characterized by its specific peanut/foot print shape. Breeds like German Shepherd, Cocker Spaniel, English bulldog, Shar Pei, Chow Chow and Labrador Retrievers are most probably seen to be affected. The most commonly affected areas are like ears, feet, ventral neck,

lips, muzzle, axilla, medial limbs and perineum. The common clinical signs include scaling, alopecia, erythema, pruritis, lichenification and hyperpigmentation. The signs can be focal or generalized, diffuse or well demarcated (Maynard *et al.* 2011).

Case reports

A total 35 no. of cases were screened for different organisms, in affections of ear, from Veterinary Clinical Complex, West Bengal University of Animal and Fishery Sciences, from the dogs under affliction of ear ailments. History was recorded from each case which included body temperature, feeding behavior, history of scratching and alopecia and regarding management of the animal.

Sampling procedure and cytology

Samples were taken by wet cotton swab method. The swabs were inserted into the horizontal canal of each ear. Swabs were then rolled over the microscopic slides and the slides were labeled accordingly. Slides were stained using Leishman's stain. These were observed at 4X, 10X, 40X and then under oil immersion (100X) magnification.

Results

The slides showed large no. of squamous epithelial cells

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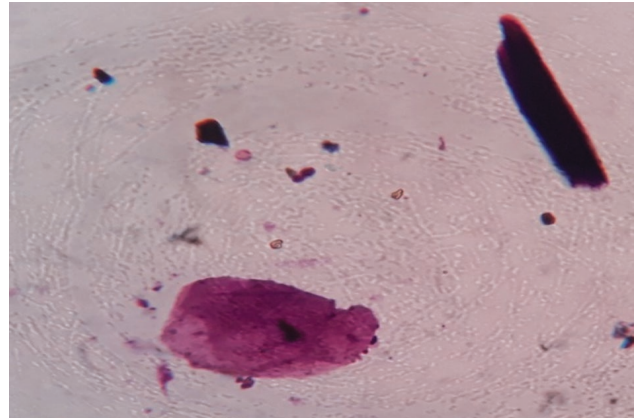
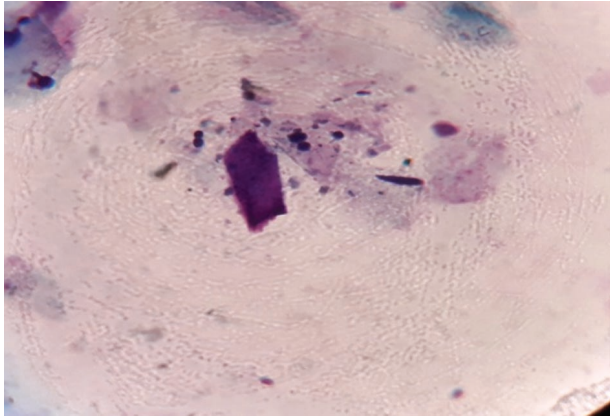


Fig. 1 and Fig. 2. Presence of *Malassezia* sp along with anucleated epithelial cell with keratin fragment (100X).

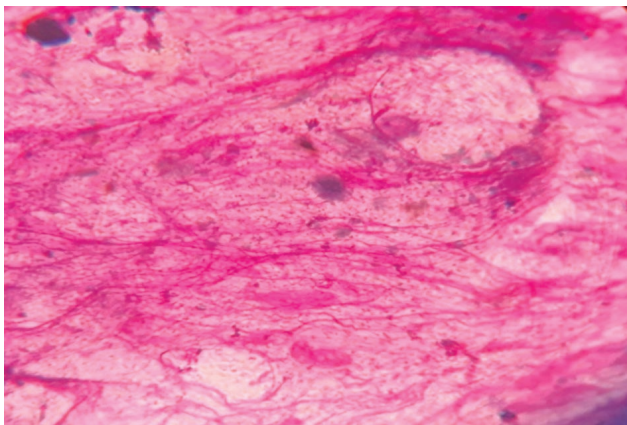


Fig. 3. Showing presence of fibrin strands (100X).

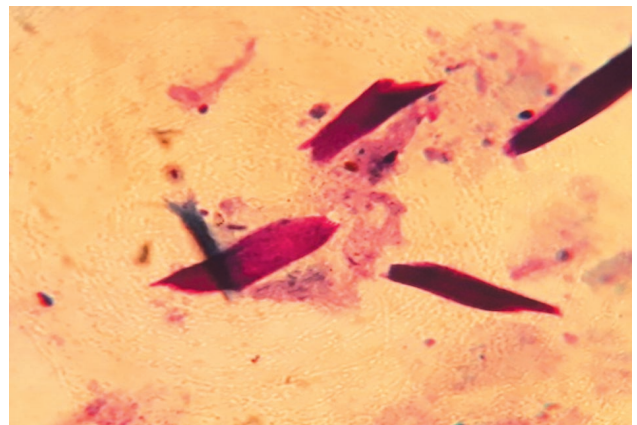


Fig. 4. showing keratine fragments and phagocytosis (100X).

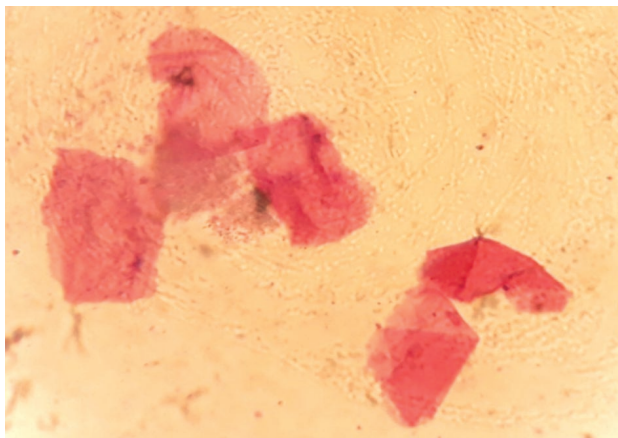


Fig. 5. Angular squamous epithelial cell (100X).

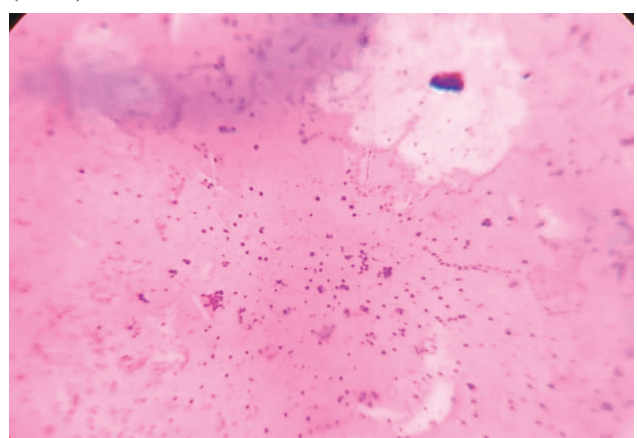


Fig. 6. Mixed bacterial infection with artifacts (100X).

mostly anucleated ones with large no. of bacteria. *Malassezia* sp. was identified as a bipolar 'foot print'-shaped organism which was stained dark blue and has broad based budding (Fig. 1 and Fig. 2) in 19 cases. Some of slides showed presence of fibrin strands (Fig. 3). Phagocytosed *Malassezia* sp. (Fig. 4) were common in

active inflammation of the ear. Angular squamous epithelial cells due to hyperplasia easily were observed in some cases (Fig. 5).

Discussion

Based on the cytological findings topical therapy with

Antifungal products, containing Ketoconazole-1%, Miconazole-1% Chlorhexidine-2%, Ectoparasiticidal sprays containing Fipronil-0.25% w/v, was done in animals (Qin *et al.* 2018). Animals showed a positive response of recovery within a few days. The prognosis is good as long as the underlying cause is identified and treated. Cytology as rapid and inexpensive tool to diagnose the underlying cause of otitis may be used as an important tool for affirmative and consistent results.

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