

THE UTILITY OF DIAGNOSTIC METHODS IN OTITIS AT DOMESTIC CARNIVORES

- a review -

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Abstract

Otitis externa represents inflammation of the external ear canal, being affected the Dermis and epidermis, right auricular cartilage. It is common in the practice of veterinary surgeons and may progress to internal or otitis media.

Key words: otitis externa, diagnostic, cytology.

Vet offices can deal with patients on a daily basis which presents earbuds problems. Statistics show that approximately 20% of dogs, i.e. 7 to 10% of cats are diagnosed as a result of consultations conducted with otitis externa. (1, 4, 10)

The structure of the external auditory canal

Outer ear extends from the Pavilion to the external ear membrane. Consists of a base part and a cartilaginous bone, located in the thickness of the temporal bone (6, 17). The shape of the letter "L" with a vertical and a horizontal portion. The vertical shape of tubes and different lengths depending on the animal and the horizontal is about 1 cm and narrows gradually towards the tympanica membrane. The skin of the ear is provided with sebaceous glands and modified sweat glands (6)

Factors causing otitis are very numerous and various.

The length of the ear canal is the longest at some races, with a sinuous paths, favoring storage and multiplication of the bacteria at this level (e.g. the Shar-Pei have been no narrowing natural ear canal, which disrupts the huge ventilation and autocleaning of the ear canal).

Excessive pilosity of aura canal to dogs with long and abundant hair must be removed by plucking hair from ear wires. The predisposition of the breed due to the shape of the ears is another cause that increases the number of otitis, e.g. breed Basset-Hound, Cocker, Setter, Labrador, etc. Frequent baths and water remained in the auditory canal due to incorrect toilets, cleaning the ears too brutally, long exposure shots, air currents can lead to otitis. (5, 6)

The use of antiseptic solutions with irritating or caustic, long-term treatment with anti-inflammatory drugs on the way general purpose (cause immunosuppression and decreases immunity), the application for a long time to other broad-spectrum products, leading to the emergence of resistant bacterial sources.

Foreign bodies represented by straws, plant debris, etc. can cause problems, especially when they get to penetrate at the level of the tympanic membrane. (6)

From parasites species we remember *Otodectes cynotis* (Otodectes cynotis), which causes intense itching, which results are the appearance of bleeding lesions.

Food allergy can be manifested through otitis externa. About 80% of the dogs with food allergy manifest otitis externa, while about 20% have as single symptom, otitis. (5, 10)

Functional disorders may occur in atopic dermatitis, Seborrheic symptom complex (1), hyperadrenocorticism or hypothyroidism, Cushing's syndrome, diabetes, deficiency of Zn, vitamin A, autoimmune diseases or auricular polyps and tumors. (2, 5, 17)

Of the ear cavity Mycosis the most representative are *Malassezia* and rarely *Candida*. It is known that *Malassezia* is part of the normal flora of the ear, becoming pathogenic when there is pending a true primary pathogen.

Diagnosis of otitis media should be on the basis of history, race, predisposing factors, primary causes, clinical signs, otoscopy. Examination of the ear when affection is unilateral it begins with healthy ear for comparison with the ill one. The first flag of ear, internal and external side, the entrance of the auricular canal, observing possible injuries, the presence of the ear wax, the quantity, colour, smell and consistency. Is made then a palpation of the area to assess the sensitivity. Verify also the audio-tactile reflex by stimulating the external orifice of the auricular (ear symptom in Aida).

The next step is the exam with the help of the otoscope this exam allows observation of the eardrum of both foreign and local changes occurred: lichenification, edema, Erythema, hyperplasia or tumor. It examines closely the eardrum integrity through otoscopy, fluorescein test, etc. If you find this secretion, are harvested for sample examination, after which the canal is cleaned and examined again with the otoscope. Changes at the level of the tympanic membrane suggests evolution towards otitis (thickening, crack or rupture). (10, 17)

Of the complementary exams we must remember the direct microscopic examination that is harvested using a sample buffer. It has to be cleaned with lactophenol and reexamined with the objective of 10 x. (5)

A special importance represents cytological examination in case which are made smears from the exudate cell.

In the following table you can see the benefits of cytological examination in comparison with making the culture of the ear secretion. However in some cases it is necessary to resort making bacterial culture, as e.g. in otitis media, otitis externa, chronic relapsing condition in case of bacteria in the form of rod. (1, 2, 4)

Table 1.

Cytologic exam vs. Culture exam (Gotthelf, 2004)

	Cytologic examination	Culture (bacterial or fungal)
Time for carrying out	Immediately	Several days
Sensitivity		
o fungi	Good	Weak
o bacterium	Good	Average/Good
o cells	Good	-
Results	Semi-quantitative	Depending on category
Significant	Ok	-
Treatment	Ok	-
Antibioresistent	-	Ok
Price	Cheap	More expensive

Sample for cytological examination are harvested from the horizontal portion of the external auditory canal, with a pad inserted previously disinfected by speculum of otoscope. The sample must be clamped to the flame, due to the high fat content. It can be used for staining method Wright edited (Diff-Quick). (11, 14, 17)

The examination shall be carried out with the objective of immersion. You can see bacteria (cocci, or bacilli) and/or levurice cell of *Malassezia* (have a footprint or a peanut shaped). (8, 13)

In the case of a smear performed from a healthy animal can be seen that: cerumene is unclear and there are colored, keratinized squamous cells, epithelial cells, occurs in *Stafilococci*/-, fungi, *Streptococci*, the formula is not a uniform color (Note precipitated from dyes). (8, 15)

In the case of emphasizing bacteria cocci form usually G+: staphylococci (pairs higher, tetrad), streptococci, enterococci (smaller, in the form of chains). In this case the exudate is creamy dark yellow or light brown. If the smear bacteria appear as Rod, typically G- *Pseudomonas* spp., *Proteus* spp., faecal coliforms. In this case, is a yellow exudates with "sweet odor". (14, 15, 16)

Most of the yeasts met are *Malassezia pachydermatis* (83% of the cases), but may be present also *M. furfur*, *M. obtusa*, *M. sympodialis*. (1, 2, 3, 4)

Always the result obtained following cytological examination is in conjunction with clinical signs observed at the patient in question, since the ECB bacteria or yeast occasional may be seen as they are a part of the normal microflora.

When ectoparasites are suspected, suspicious material should be placed, with a few drops of mineral oil on a microscopic slide, followed by a coverslip. Mites can be easily detected at low magnifications (4 x or 10 x). The most common parasite, usually found in dark-brown crumbly discharge within the ear canal (especially in cats), is *Otodectes cynotis* the ear mite. Demodex mites may also be seen on ear smears. (4, 7, 10, 13,)

CONCLUSIONS

As can be seen, the cytological examination of ear secretion has a real help in diagnosing the etiology of external otitis, stand at hand to all vets. Learning method is simple, and the Endowment for performing cytological examination is minimum and it is relatively cheap.

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