



Cytology-guided treatment of canine otitis externa

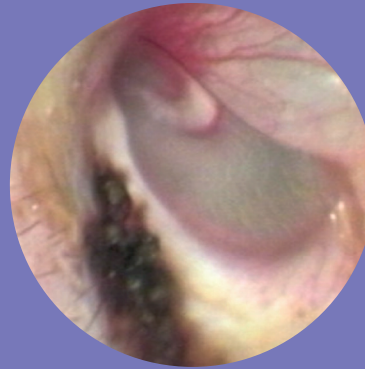
1

Otoscopic examination

Identify presence of parasites, masses or foreign bodies.

Assess external ear canal for acute and chronic inflammation: oedema, hyperplasia, stenosis, mineralisation.

Where possible, visualise the tympanic membrane.



Intact tympanic membrane



Ruptured tympanic membrane

2

Prepare sample for cytological examination

Insert cotton bud deep into vertical ear canal and rotate gently. Sample each affected ear using a new cotton bud.

Roll each cotton bud onto a separate labelled glass slide and air dry briefly.

Stain with Diff Quik stain: dip 5 times in each solution, rinse with water and blot off excess.

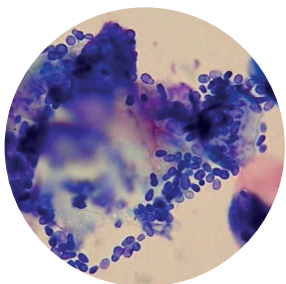
3

Cytological examination

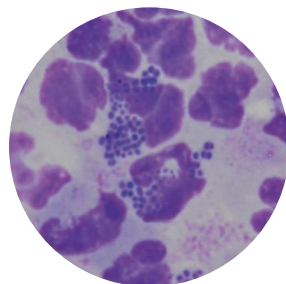
Scan and identify areas of interest with a single cell layer using 4X objective lens.

Increase magnification to high power (40X objective) to examine cells and microorganism numbers. A healthy ear should have < 5 bacteria and < 2 yeast per high power field.¹

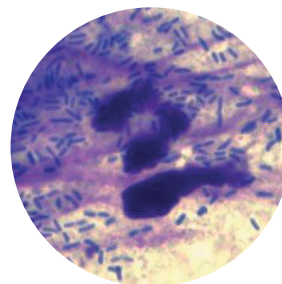
For oil immersion objective, place a drop of oil with a cover slip onto the slide and increase magnification to 100X objective to examine organism morphology.



Malassezia pachydermatis
40X objective (400X magnification)



Cocci (Staphylococcus pseudintermedius)
100X objective (1000X magnification)



Rods (Pseudomonas aeruginosa)
100X objective (1000X magnification)

4

Clean the ear canal thoroughly

Removing wax, debris and biofilm allows contact of topical otic preparations with the epithelial surface.

Irrigate the external ear canal with warm saline to allow assessment of the tympanic membrane.

Cerumenolytics are indicated in ears with excessive wax but are contraindicated in tympanic membrane rupture.

Tris-EDTA can be helpful to breakdown biofilms and is middle ear safe.

Dry the ear canal thoroughly to remove excess moisture.

5

Commence treatment

Treat affected ear/s with a triple-therapy otic preparation where indicated.

Consider a single-dose veterinary-administered product to ensure treatment compliance.

Goal of therapy is resolution of clinical signs and correction of bacterial and fungal dysbiosis.

Schedule revisit consultation (e.g 4 weeks post-treatment).

6

Revisit and commence management plan

Repeat cytology to ensure resolution of dysbiosis.

Implement plan to:

- (i) manage underlying disease
- (ii) address failure of ear canal self-cleaning (epithelial migration).

If infection recurs after empirical therapy, readdress underlying disease management.

7

Consider microbial culture:

To definitively identify the bacteria involved in the infection.

Where empirical therapy has failed.

Where infection has recurred within three months of a previous episode.²

Note that sensitivity results do not necessarily correlate with topical susceptibility.³

1. A Burrows, personal communication, 31 March, 2024. 2. Nuttall, T. (2023). 'Managing recurrent otitis in dogs: what have we learned and what can we do better?'. JAVMA. doi:10.2460/javma.23.01.0002. 3. Nuttall, T. (2016). 'Successful management of otitis externa'. In Practice. doi:10.1136/inp.i1951.

^{S4} MOMETAMAX[®] ULTRA Reg. No. 23/14.3/05 (Act 101/1965) Each 0.8 mL contains: Gentamicin (sulfate) equivalent to 6880 IU (6.88 mg), Posaconazole 2.08 mg, and Mometasone furoate (monohydrate) equivalent to 1.68 mg.

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