

CLINICAL MANAGEMENT OF OTITIS

KARLY HICKS, DVM
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DEFINITIONS

- Otitis externa
 - Includes pinna
- Otitis media
 - Bulla
- Otitis interna
 - Cochlea



THE 3 P'S

1. Predisposing factors
2. Primary factors
3. Perpetuating factors

PREDISPOSING FACTORS

- Breed
 - Stenosis
- Fur
- Polyp
- Trauma
- Moisture



<http://www.vetarg.co.uk/About>



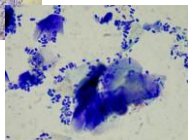
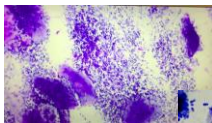
<https://www.petfinder.com/dogs/poodle/>

PRIMARY FACTORS

- Allergic
- Endocrine
- Foreign body
- Parasitic
- Immune mediated
- Neoplasia
- Nutritional
- Vasculitis
- Other

PERPETUATING FACTORS

- Infection
 - Bacteria
 - Rods, cocci, mixed
 - Yeast
 - *Malassezia*
- Otitis media
- Hyperplasia
- Mineralization

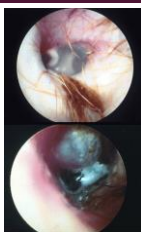


DIAGNOSTICS

- Otoscopic examination
- Cytology
- Advanced diagnostics
 - Radiographs
 - CT/MRI
 - Video otoscopy
- Culture
- Myringotomy
- Biopsy/histopathology

OTOSCOPIC EXAMINATION

- Pars tensa
- Pars flaccida
- Is TM intact?
 - Ototoxicity
- Clean ears and re-examine



CYTOLOGY

- Type of infection
- Inflammatory cells
- Common pathogens
 - Gram +
 - Staph (cocci)
 - Strep (cocci)
 - Enterococcus (cocci)
 - Corynebacterium (rods)
 - Gram – (all rods)
 - E. coli
 - Pseudomonas
 - Proteus

Cole UK: Anatomy and physiology of the canine ear
Veterinary dermatology 2009 Dec;20(5):412-21.

DRUG CHOICE

- How does cytology influence **topical** drug choice?
- Broad spectrum
 - Polymyxin (Surolan ®)
 - Aminoglycoside containing products
 - Gentamicin, neomycin
 - Fluoroquinolone containing products
 - Enrofloxacin (Baytril Otic®), orbifloxacin (Posatex®)
- Narrow spectrum (Gram + cocci)
 - Florfenicol (Osumnia ®)

SINGLE DOSE TREATMENTS

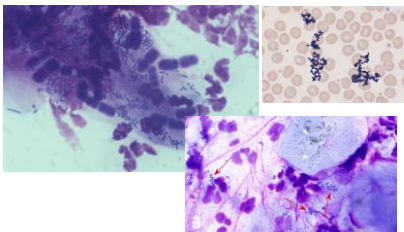
Labelled Indications

- *Osumnia® is indicated for the treatment of otitis externa in dogs associated with susceptible strains of bacteria (*Staphylococcus pseudintermedius*) and yeast (*Malassezia pachydermatis*)
- *Claro® (florfenicol, terbinafine, mometasone furoate) Otic Solution features the only FDA-approved, veterinarian-administered, single-dose treatment regimen for canine otitis externa associated with susceptible strains of yeast (*Malassezia pachydermatis*) and bacteria (*Staphylococcus pseudintermedius*)
- Cocci only infection



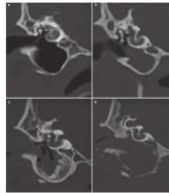
CYTOLOGY TRICKS

- Melanin granules
- Stain precipitate
- *Simonsiella* sp.
- Mold and pollen spores



CT/MRI

- Neurologic disease
- Pain on opening mouth or jaw
- Palpable mineralization
- Non-responsive stenosis
 - Prednisone at 1-2 mg/kg/day



Reichle, R. et al. "Comparative otitis media with effusion in 100 dogs with otitis media with effusion and middle ear disease: a retrospective study." *Veterinary Radiology* 53 (2012): 45-50.

TOPICAL TREATMENTS

- Cleaning agents
- Antifungals
- Antibiotics and combination products
 - Ototoxicity: aminoglycosides (gentamicin, neomycin), chlorhexidine
- Glucocorticoids
 - Least to most potent: hydrocortisone → triamcinolone → betamethasone → dexamethasone → fluocinolone acetonide → mometasone furoate

MALASSEZIA

- Part of the microbiota of canine skin
- Taking over after rods cleared
- Cleaner?

WHEN TO CULTURE?

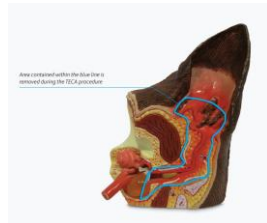
- If systemic medications used
 - MIC listed on culture is for systemic (plasma concentration)
 - Topical concentration can be 100-1000x that of systemic medications
- Otitis media
- If not responding to topicals, is biofilm present?
 - Inhibit antimicrobial penetration
- Triz EDTA
- How to culture?
 - Myringotomy
 - Ruptured TM – deep sampling

SYSTEMIC TREATMENTS

- Systemic antibiotics
 - Based on culture and susceptibility
 - Otitis media
 - Ruptured TM – not straightforward
- Glucocorticoids
 - 1-2 mg/kg/day prednisone
- Analgesics
- Opioids

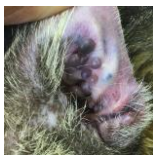
TECA-BO

- End-stage disease
- Mineralization
- Non-responsive stenosis
- Tumors



CERUMINOUS CYSTOMATOSIS

- Blue, brown, black papules, vesicles
- May predispose to neoplasia
 - NON neoplastic
- Irritation or otitis present
- Treat with laser, cryotherapy, or surgery



PSOM

- Primary secretory otitis media
- Cavaliers, can be in other breeds/feline
- Bulging pars flaccida
 - Treatment is myringotomy



TAKE HOME POINTS

- Cytology is important!
- Topical concentrations > systemic concentrations
- Find the underlying cause

REFERENCES

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- Cole LK. Anatomy and physiology of the canine ear. *Veterinary dermatology*. 2009 Oct;20(5-6):412-21.
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- <https://www.elanco.us/products-services/dogs/osurnia>