



Clinical Picture

- Any age, breed or sex
- More common in warm weather
- More common in dogs with poor husbandry
- Conformational risk factors
 - Pendulous ears
 - Hair in the canal
 - Narrowed canals (e.g., shar pei dog)
- Breed risks-high prevalence of allergic disease/cornification defects

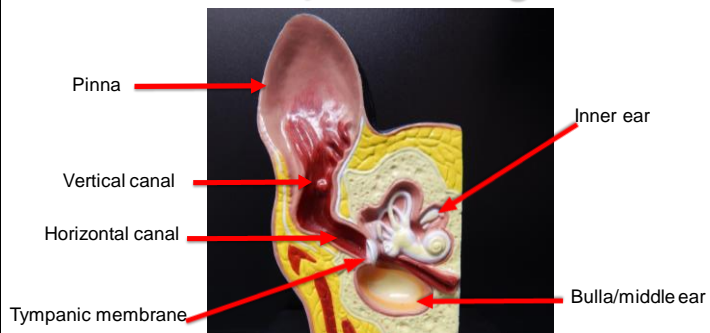


Clinical Signs

- Scratching, rubbing ears
- Shaking head
- Odd carriage to the head-to the side or head tilt
- Odor, exudate, blood
- Aural hematoma
- Painful ears and associated behaviors



Anatomy of the Dog Ear





“Recipe for Otitis”





Inflammation

- Increases volume of secretions in the ear
- Creates/contributes to stenosis
- Increase in internal temperature
- Changes surface of ear canal and environment





Stenosis

- Traps ear secretions
- Prevents normal ‘cleaning of ear canal’
- Increases humidity in ear
- Inflammation-stenosis-more inflammation-even more stenosis
- Major cause of pain
- Prevent topical medications from reaching target area
- Can be temporary, if left untreated ear can become fibrotic or even calcified





Micro-Organisms

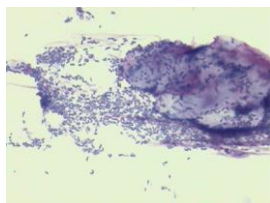
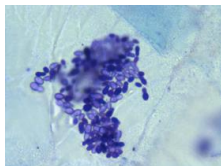
Bacteria alone do not constitute an infection!! Need concurrent clinical signs

Normal flora (*Staphylococcus*, *Streptococcus*, *Malassezia*)

Bacteria in association with clinical signs

Rods, especially *Pseudomonas*

Yeast Cocci





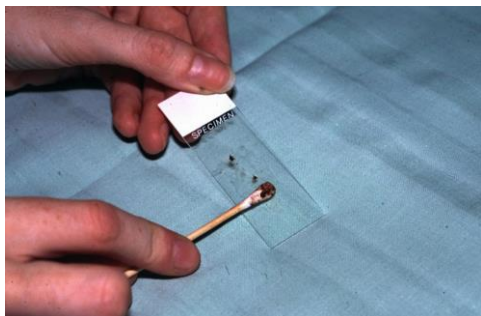
Cost Effective Diagnostics





Cost Effective Diagnostics





Slide for staining
Slide in mineral oil (Demodex and Otodectes)



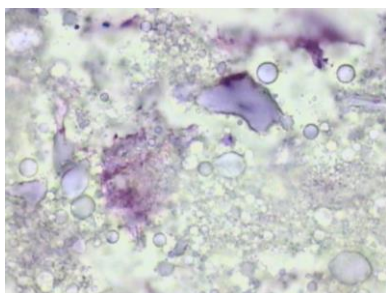
Thumb Rules for Ear Cytology

- Core diagnostic for ear disease
- Interpret in light of whether or not there are clinical signs
- Abnormal findings in the presence of clinical signs need an action plan





Typical “normal” debris from “dirty ear”





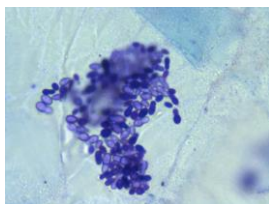
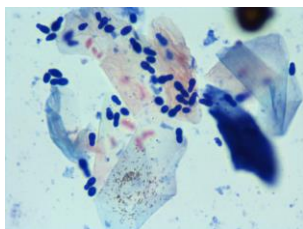
Cytological Specimens

Cellular Samples

- Neutrophils- assume infection
- Number of organisms-not accurate reflection of severity of infection-what are clinical signs?
- Cocci and/or Yeast only: allergic diseases and primary seborrheic disease
- Rods: worst case scenario is *Pseudomonas*

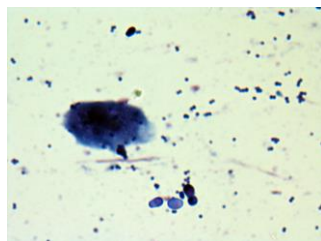
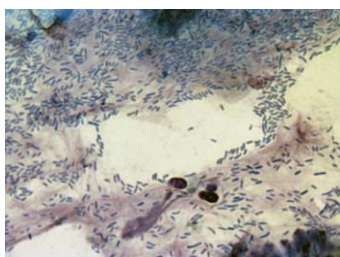


Malassezia



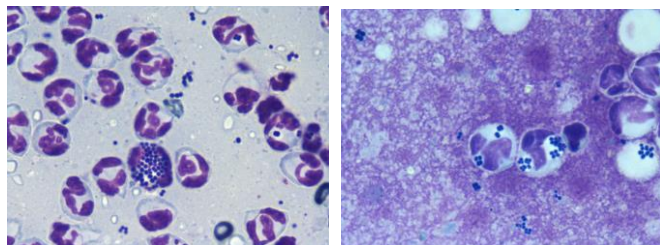


Cocci and Rods Vs. Yeast



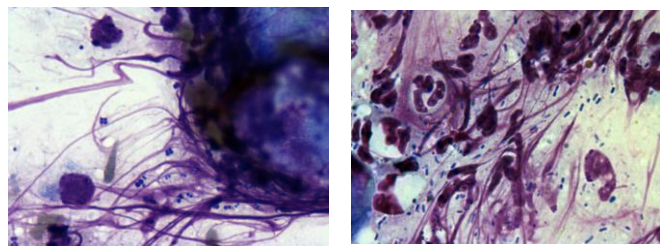


Intra and Extra Cellular Cocci





Nuclear Streaming





Otitis Triage Examination

Obvious trauma?

Acute and curable?

Complicated problem?

Clearly end stage ear(s)?

Immediate surgery?





Otoscopic Exam - If you can





Uncomplicated Otitis

Absence of any other clinical signs of skin disease

Young dogs (e.g., ear mites)

Common in warm humid weather

Ears may be painful but palpate normally

Erythema and exudate on pinna but no signs of chronic changes

Responds to conservative treatment; ear cleaning and topic otic ointments

Advancing animal and human health with science and compassion

23



Hair in the Ear Canal

Standard poodles with unilateral congenitally narrowed ear canal

Hair in the external ear canal

- Hair roots can extend behind the TM
- Plucking hairs can cause otitis media
- Hairs ringing the TM





One Time Trigger Treatments

Gentle ear cleaning

Combination otic product
(antibiotic/antifungal/steroid)

Instill GENEROUS amounts





Complicated Otitis

Obvious clinical signs of skin disease other than otitis

Any age

Ears **OBVIOUSLY** affected

Painful

Usually bilateral

History and visual exam consistent with chronic otitis

Advancing animal and human health with science and compassion

26



Visual Exam and Palpation





Triage: End-Stage Ears or not?



Advancing animal and human health with science and compassion

28



Triage: End-Stage Ears or not?



6/2/2015

UNIVERSITY OF WISCONSIN-MADISON

29



Cost Effective Diagnostics

Diagnostic Imaging

Radiographs


CT Scan

Culture to confirm multi-drug resistance


Steroid Trial to Decrease Stenosis?

Advancing animal and human health with science and compassion


30



Confirmation of End-stage Ear



Note obstructed canals and calcification in soft tissue




Normal air filled ear canal




End Stage Ear Disease and Surgery Total Ear Canal Ablation



32



End Stage Ear Disease and Surgery Total Ear Canal Ablation



Advancing animal and human health with science and compassion

33

School of Veterinary Medicine
University of Missouri - Kansas

The BIG 4 Causes of Chronic Otitis

- Obstruction
- Undiagnosed infection/resistant infection
- Otitis media
- Undiagnosed underlying skin disease

Advancing animal and human health with science and compassion 34

School of Veterinary Medicine
University of Missouri - Kansas

#1 Obstruction

Includes but is not limited to:

- Result of inflammation
- Swelling of canal as a result of underlying skin disease
- Mechanical from foreign body
- Mechanical from tumor
- Breed related

Advancing animal and human health with science and compassion 35

School of Veterinary Medicine
University of Missouri - Kansas

Proliferative Otitis


1 mg/kg orally for 15 to 30 days



Advancing animal and human health with science and compassion 36

School of Veterinary Medicine
Hebrew University of Jerusalem

Foreign Bodies



Advancing animal and human health with science and compassion

37

School of Veterinary Medicine
Hebrew University of Jerusalem

Foreign Bodies



Advancing animal and human health with science and compassion

38

School of Veterinary Medicine
Hebrew University of Jerusalem

Ear Tumors

Veterinary Dermatology 2005, 16, 276-280

Case report

Bilateral ear canal neoplasia in three dogs

GILA ZUR


Koret School of Veterinary Medicine, Faculty of Agricultural, Food and Environmental Quality Sciences, The Hebrew University of Jerusalem, Rehovot 76100, Israel

Advancing animal and human health with science and compassion

39

School of Veterinary Medicine
University of Kentucky

Ear Tumors



Advancing animal and human health with science and compassion 40

School of Veterinary Medicine
University of Kentucky

Breed Related



Advancing animal and human health with science and compassion 41

School of Veterinary Medicine
University of Kentucky

Primary Secretory Otitis Media (PSOM)




Advancing animal and human health with science and compassion 42

 School of Veterinary Medicine
UNIVERSITY OF MISSOURI-COLUMBIA

Primary Secretory Otitis Media (PSOM)




Advancing animal and human health with science and compassion 43

 School of Veterinary Medicine
UNIVERSITY OF MISSOURI-COLUMBIA

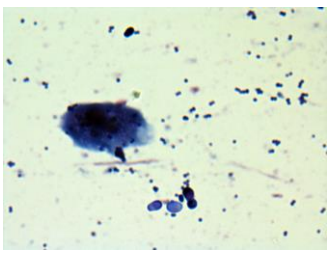
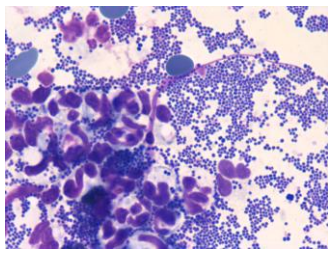
#2 Undiagnosed and/or Resistant Infections

- Can complicate any of the big 4 causes of chronic otitis
- May result from treatment related complications
- Untreated *Malassezia* or *Candida*
- Cocci-multiple strains, Methicillin resistant isolates
- Rods-especially *Pseudomonas*
- Multi-drug resistant infections may require TECA for resolution


Advancing animal and human health with science and compassion 44

 School of Veterinary Medicine
UNIVERSITY OF MISSOURI-COLUMBIA

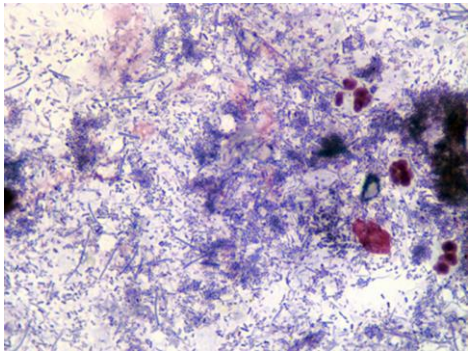
Number of Organism Does Not Reflect Extent of Infection



Advancing animal and human health with science and compassion 45

 School of Veterinary Medicine
UNIVERSITY OF MISSOURI-COLUMBIA

Rods-Most Worrisome



Advancing animal and human health with science and compassion

46

 School of Veterinary Medicine
UNIVERSITY OF MISSOURI-COLUMBIA

Indications for Ear Culture

Includes but is not limited to:

- Complicated ear infection
- Purulent ear infection
- Lack of response to appropriate therapy
- Complicated ear infection
- Finding rods on cytology
- Persistent finding of bacteria



Advancing animal and human health with science and compassion

47

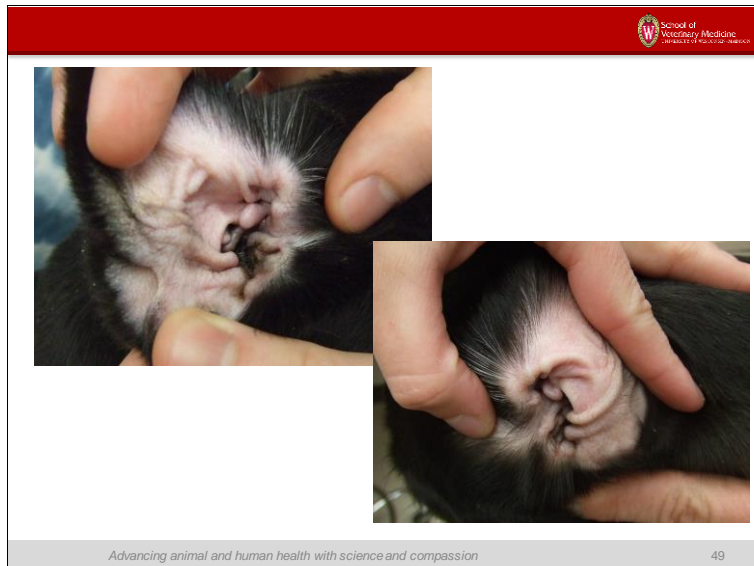
 School of Veterinary Medicine
UNIVERSITY OF MISSOURI-COLUMBIA

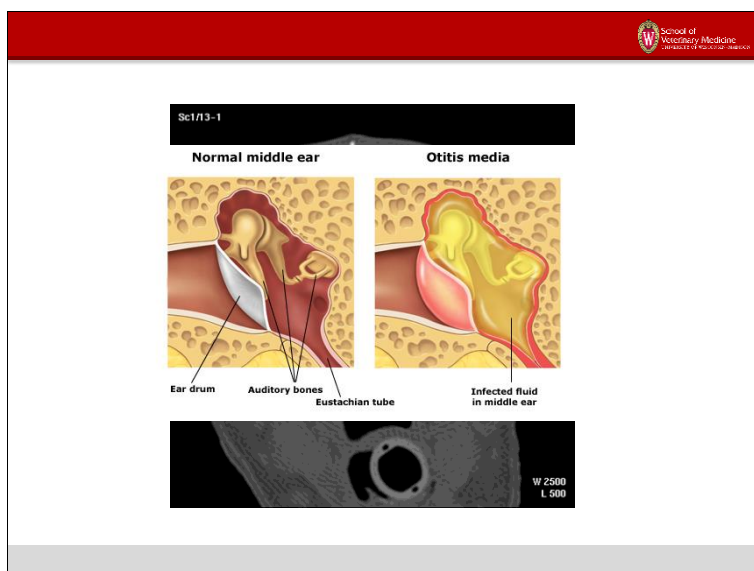
#3 Otitis Media/Middle Ear Infection

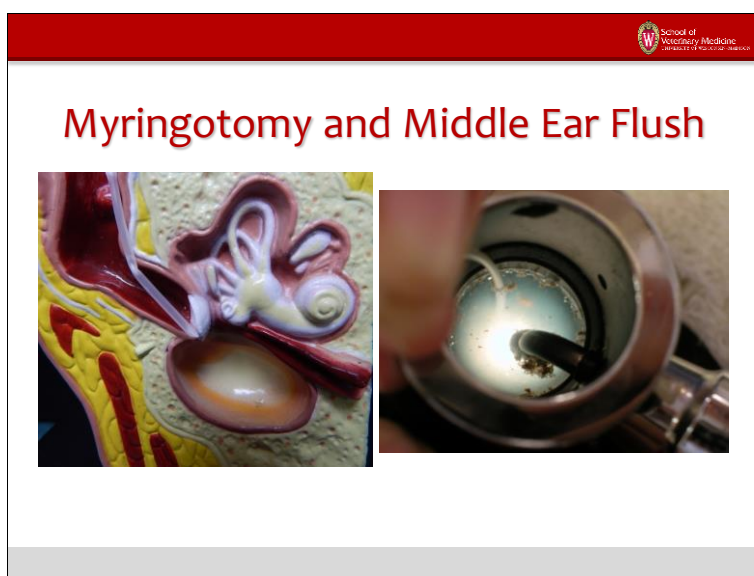


Advancing animal and human health with science and compassion

48







 School of Veterinary Medicine
University of Wisconsin - Madison

Culture Contents of Bulla





Advancing animal and human health with science and compassion 52


 School of Veterinary Medicine
University of Wisconsin - Madison

#4 Undiagnosed Underlying Disease


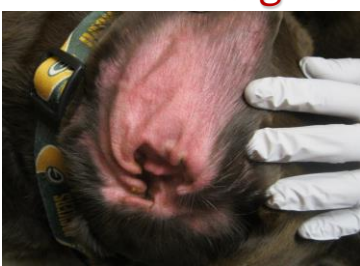
Allergic Skin Disease (See Itchy Dog Webinar)

Primary Disorder of Cornification (See Seborrhea Webinar)

Advancing animal and human health with science and compassion 53

 School of Veterinary Medicine
University of Wisconsin - Madison

Allergic Skin Disease



Advancing animal and human health with science and compassion 54



Primary Disorder of Cornification



Advancing animal and human health with science and compassion

55



Primary Disorder of Cornification



6/2/2015

UNIVERSITY OF WISCONSIN-MADISON

56





Urgent Treatment Goals

- Immediate Triage-Is there an end stage ear?
- Decrease inflammation
- Decrease mechanical occlusion/swelling
- Treat micro-organisms
- Manage pain
- Coat Hygiene

Advancing animal and human health with science and compassion


57

 School of Veterinary Medicine
UNIVERSITY OF MISSOURI - KANSAS CITY



Advancing animal and human health with science and compassion

58

 School of Veterinary Medicine
UNIVERSITY OF MISSOURI - KANSAS CITY


Why Steroids?

Topical Steroid Alone
Equal parts dexamethasone injectable and propylene glycol
10 drops/1 squirt twice daily for 7 days, then once daily for 7 days, then as needed

Combination Product?
What about injectable steroids?
Oral Steroids?

Advancing animal and human health with science and compassion

59

 School of Veterinary Medicine
UNIVERSITY OF MISSOURI - KANSAS CITY

Reduce Mechanical Occlusion- Ear Cleaning

Is sedation necessary??

Ear Cleaners-instill and allow to work!

Gentle mechanical removal of debris

Clean and massage

Always apply otic steroids post cleaning

Advancing animal and human health with science and compassion

60



Ear Cleaner Comments



Advancing animal and human health with science and compassion

61



Pediatric Ear Currettes

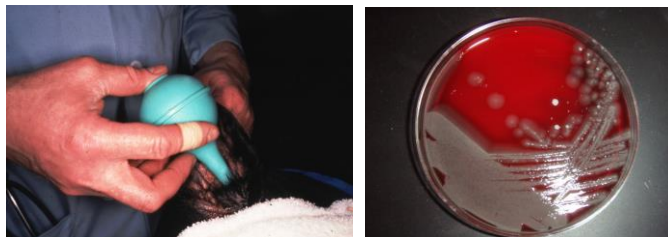


Advancing animal and human health with science and compassion

62



Beware!



Advancing animal and human health with science and compassion

63



Treat Micro-Organisms

- Routine ear cleaning (with Tris buffered EDTA)
- Topical combination antimicrobial with a steroid
- Systemic antimicrobials
- Monitor via examination and cytology





Address Underlying Trigger

- Treatable and curable, e.g., ear mites?
- Foreign body
- Underlying allergies
- Underlying primary disorder of cornification



Where are foster families needed?

- Post surgical care of dogs having TECA
- Acute management of seborrheic otitis
- Itchy dog work up for dogs with allergic otitis
- Acute management into remission of diagnosed allergic otitis
- Post myringotomy/middle ear flush
- Treatment of dogs with *Pseudomonas* ear infection



School of
Veterinary Medicine
UNIVERSITY OF WISCONSIN-MADISON
*Advancing animal and human health
with science and compassion*

www.vetmed.wisc.edu



Advancing animal and human health with science and compassion 67
