

DOGS AND CATS EXTERNAL EAR INFECTIONS AND APITHERAPY CLINICAL OBSERVATIONS

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Extremely frequent reason for consultation
(1 consultation per day in our structure)

Many therapeutic failures with a selection
of resistant germs

Facing antibiotic resistance is a priority for
the World Health Organization

Important need to reduce the use of
antibiotics

Overview of experiences across several
clinical cases

DOGS AND CATS EXTERNAL EAR INFECTIONS AND APITHERAPY CLINICAL OBSERVATIONS

Reminder on dogs external ear infections

Common treatment used

“Eco Antibio” Plan
Resistance to antibiotic

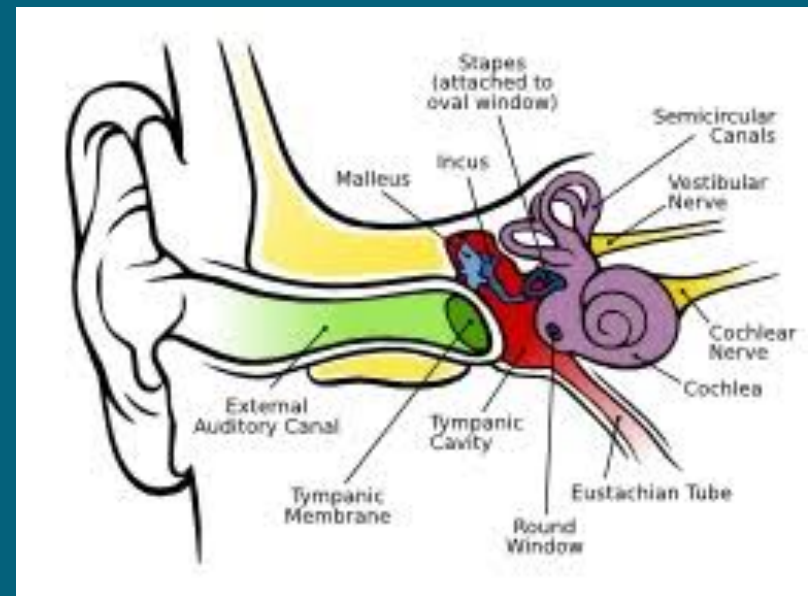
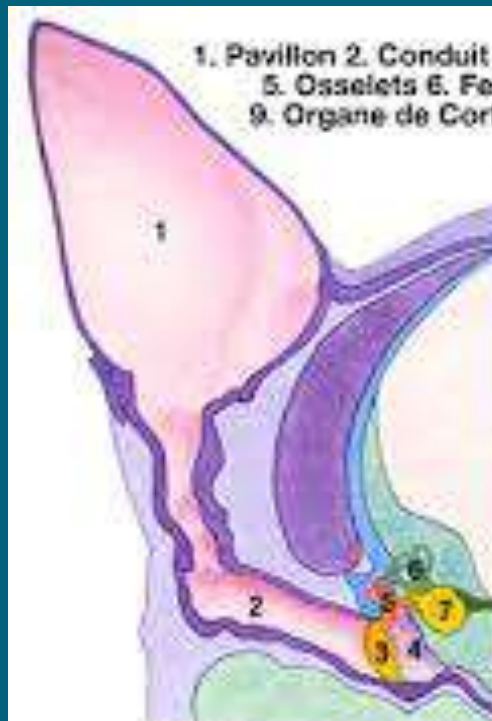
Clinical observations

Discussion



DOGS AND CATS EXTERNAL EAR INFECTIONS AND APITHERAPY CLINICAL OBSERVATIONS

Comparative anatomy of the dog's and man's external ear



DOGS AND CATS EXTERNAL EAR INFECTIONS AND APITHERAPY CLINICAL OBSERVATIONS

Etiology and Pathogenesis

Predisposing factors

Primary causes

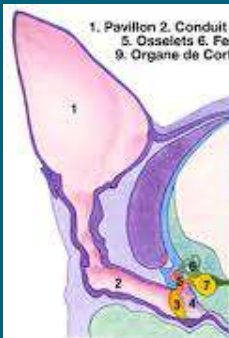
Complications



DOGS AND CATS EXTERNAL EAR INFECTIONS AND APITHERAPY CLINICAL OBSERVATIONS

Etiology Pathogenesis

Predisposing factors



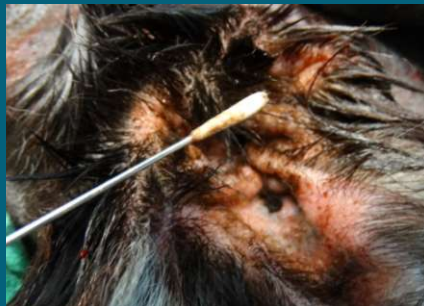
Anatomical particularities



Predisposed breeds



Long hair in the ear canal



Iatrogenic factors -
bad or aggressive treatments



Environmental factors - humidity

DOGS AND CATS EXTERNAL EAR INFECTIONS AND APITHERAPY CLINICAL OBSERVATIONS

Etiology Pathogenesis

Primary causes

External factors



Foreign bodies
(spikelet)



Parasits

DOGS AND CATS EXTERNAL EAR INFECTIONS AND APITHERAPY CLINICAL OBSERVATIONS

Etiology Pathogenesis

Primary causes

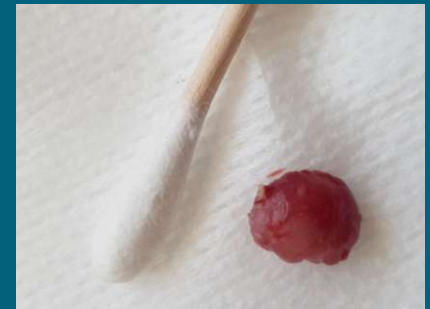
Internal factors



Hypersensitivity



Seborrheic keratoses states



Tumors

DOGS AND CATS EXTERNAL EAR INFECTIONS AND APITHERAPY CLINICAL OBSERVATIONS

Etiology Pathogenesis

Bacterial and mycosis
Proliferation



Staphylococcus intermedius
Pseudomonas
Proteus
Beta hemolytic Streptococcus
E.coli
Malazessia



Selection of multi-resistant germs



Euthanasia

Complications

Modifications of the
auditory canal



Middle or inner ear infection



Surgery



DOGS AND CATS EXTERNAL EAR INFECTIONS AND APITHERAPY CLINICAL OBSERVATIONS

Major Clinical Types



Healthy Ear



Ceruminous otitis



Suppurative otitis



Ulcerative otitis



Erythematous otitis

DOGS AND CATS EXTERNAL EAR INFECTIONS AND APITHERAPY CLINICAL OBSERVATIONS

Usual treatments done

Cleaning

Detergent and antiseptic solution

Ceruminolytic solution and anti-biofilm

Topical treatment

Anti-inflammatories alone

Antibiotic ointment or suspension, anti-mycotic,
anti-inflammatory , anti-parasitic

Anti-microbial peptides

Systemic treatment

Anti-inflammatories

Antibiotics

DOGS AND CATS EXTERNAL EAR INFECTIONS AND APITHERAPY CLINICAL OBSERVATIONS

Treatment Failure Antibiotic resistance problem

Lack of research on predisposing factors

Evolution often insidious

Poor compliance

Resistance

Restriction on the usage of antibiotics



Necessity of finding alternative traitements

DOGS AND CATS EXTERNAL EAR INFECTIONS AND APITHERAPY CLINICAL OBSERVATIONS

Honey and Propolis properties

Cleaning

Deterrence and strong absorbing power
Antibiofilm



Topical treatment

Anti-inflammatory
Antibiotic ointment, antimycotic,
anti-inflammatory , anti-parasitic
Anti-microbial peptides
Analgesic



DOGS AND CATS EXTERNAL EAR INFECTIONS AND APITHERAPY CLINICAL OBSERVATIONS

Selection of cases

- Severe otitis

- Chronic or recurrent otitis

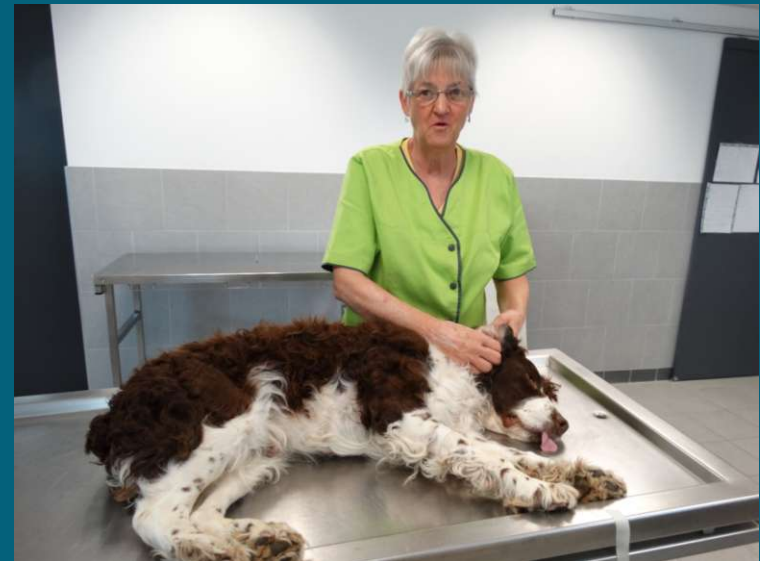
- Bacteriology

Treatment

- Cleaning Day 0 if possible

- Honey or propolis+honey 2 x day

- Control every week



DOGS AND CATS EXTERNAL EAR INFECTIONS AND APITHERAPY CLINICAL OBSERVATIONS

Espèce	Type d'otite	Bactériologie	Traitement	Résultat
Chat européen	Otite suppurée	Staph intermedius	Propomiel 2%	+ 8j
Lévrier afghan	Otite cérumineuse bilatérale		Miel	+ 15 j
springer	Otite chronique bilatérale	Staphylococcus pseudo-intermedius	Propomiel 2 %	+ 45j
Springer	Otite suppurée unilatérale à CE	Pseudomonas	Miel stérile	+ 45 j
Croisé	Otite bilatérale	Staph intermedius	Propomiel 2 % rouge	+ 15 j
Bouvier bernois	Otite bilatérale	Polymicrobienne puis Proteus OD et Staphylococcus aureus OG	Propomiel 10 %	+ 60 j
Chat européen	Otite cérumineuse unilatérale		Propomiel 2 %	+/- pas de suivi
Cocker roux	Otite suppurée gauche	Pseudomonas et Streptococcus canis	Propomiel 2 %	+
Cocker noir et feu	Otite ulcérate Bilatérale	Proteus et Streptococcus canis	Propomiel 2 %	Arrêt du traitement Inconditionnelle des AB chiens toujours sous AB depuis 4 mois
Cocker tricolore	Otite suppurée kératoséborréique	Proteus	Propomiel 2 %	+
Croisé	Otite KS Dysendocrinie		Propomiel 2 %	+ 15 j rechute puis traitement permanent
Shar pei	Otite suppurée	Pseudomonas	Propomiel 10 % dilution	+ 60 j entretien 2 mois

DOGS AND CATS EXTERNAL EAR INFECTIONS AND APITHERAPY CLINICAL OBSERVATIONS

Case # 1 suppurative otitis in cats : staphylococcus
intermedius



Consultation



Cleaning



Honey + propolis 2 %

DAY ONE

DOGS AND CATS EXTERNAL EAR INFECTIONS AND APITHERAPY CLINICAL OBSERVATIONS

Case # 1 suppurative otitis in cats : staphylococcus
intermedius



Clear improvement



Healthy opposite ear

DAY EIGHT

DOGS AND CATS EXTERNAL EAR INFECTIONS AND APITHERAPY CLINICAL OBSERVATIONS

Case # 2 ceruminous otitis in both ears : Afghan Hound



Hypertrichosis and droopy ears



Abundant brown cerumen

Day One

DOGS AND CATS EXTERNAL EAR INFECTIONS AND APITHERAPY CLINICAL OBSERVATIONS

Case # 2 ceruminous otitis in both ears : Afghan Hound



Day 30 : clear improvement



Day 120 : slight relapse

DOGS AND CATS EXTERNAL EAR INFECTIONS AND APITHERAPY CLINICAL OBSERVATIONS

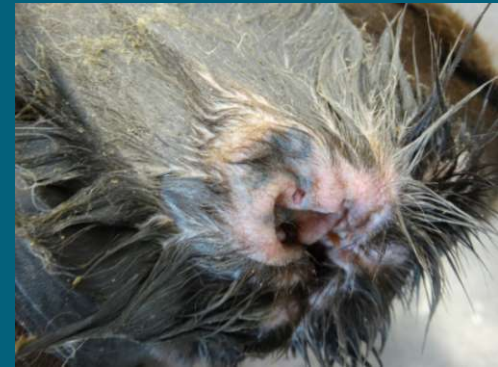
Case # 3 Suppurative otitis in right ear : Springer spaniel



Day 0 Very inflammatory otitis



Propolis + Honey



Improvement with
treatment (propolis and honey)

DOGS AND CATS EXTERNAL EAR INFECTIONS AND APITHERAPY CLINICAL OBSERVATIONS

Case # 4 Suppurative otitis in left ear : Springer spaniel



Healthy ear
Right side



Anesthesia for examination of left ear
animal in extreme pain

Antibiogramme réalisé selon le norme NF EN 107

Souche isolée : *Pseudomonas aeruginosa*

Prétraitement : antibiotique

ETC : sensible à 12 antibiotiques. Il n'existe aucune résistance observée par le CMA-SPM, laboratoire de diagnostic vétérinaire et des échantillons de biologie vétérinaire.

Antibiotique	Conc. (µg)	Conc. (mg)	Conc. (g)	Conc. (g)
Amoxicilline	10	10	10	10
Amoxicilline 12	12	12	12	12
Amoxicilline 18	18	18	18	18
Amoxicilline 20	20	20	20	20
Amoxicilline 25	25	25	25	25
Amoxicilline 30	30	30	30	30
Amoxicilline 35	35	35	35	35
Amoxicilline 40	40	40	40	40
Amoxicilline 45	45	45	45	45
Amoxicilline 50	50	50	50	50
Amoxicilline 55	55	55	55	55
Amoxicilline 60	60	60	60	60
Amoxicilline 65	65	65	65	65
Amoxicilline 70	70	70	70	70
Amoxicilline 75	75	75	75	75
Amoxicilline 80	80	80	80	80
Amoxicilline 85	85	85	85	85
Amoxicilline 90	90	90	90	90
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Amoxicilline 995	995	995	995	995
Amoxicilline 1000	1000	1000	1000	1000

Multi-resistant
pseudomonas bacteria

DOGS AND CATS EXTERNAL EAR INFECTIONS AND APITHERAPY CLINICAL OBSERVATIONS

Case # 4 Suppurative otitis in left ear : Springer spaniel



Day 8
significant improvement



The spikelet could be seen
and removed



Sterile Honey
was used for this case

DOGS AND CATS EXTERNAL EAR INFECTIONS AND APITHERAPY CLINICAL OBSERVATIONS

Case # 4 Suppurative otitis in left ear : Springer spaniel



Day 8



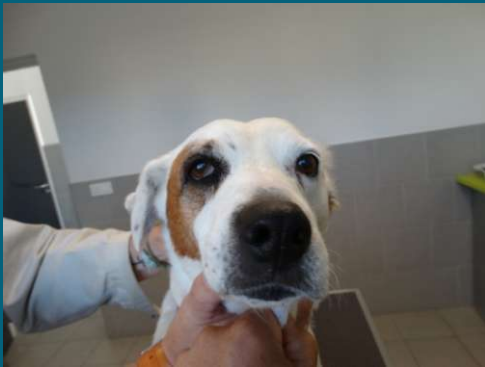
Day 20



Day 45 - Healed

DOGS AND CATS EXTERNAL EAR INFECTIONS AND APITHERAPY CLINICAL OBSERVATIONS

Case # 5 Suppurative otitis left ear : mixed breed



Day 0



Day 0



Day 8

DOGS AND CATS EXTERNAL EAR INFECTIONS AND APITHERAPY CLINICAL OBSERVATIONS

Case # 6 Bilateral suppurative otitis in a Bernese mountain dog



Day 0



J 0



J45

DOGS AND CATS EXTERNAL EAR INFECTIONS AND APITHERAPY CLINICAL OBSERVATIONS

Breed	Type d'otite	Bactériologie	Traitement	Résultat
European cat	Suppurative otitis	Staph intermedius	Propomiel 2%	+ 8j
Afghan hound	Ceruminous bilateral otitis		Miel	+ 15 j
Springer	Chronic bilateral otitis	Staphylococcus pseudo-intermedius	Propomiel 2 %	+ 45j
Springer	Suppurative otitis one side CE	Pseudomonas	Miel stérile	+ 45 j
Mixed breed	Bilateral otitis	Staph intermedius	Propomiel 2 % rouge	+ 15 j
Bernese mountain	Bilateral otitis	Polymicrobienne puis Proteus OD et Staphylococcus aureus OG	Propomiel 10 %	+ 60 j
European Cat	Ceruminous otitis unilateral		Propomiel 2 %	+/- pas de suivi
Cocker roux	Suppurative otitis left ear	Pseudomonas et Streptococcus canis	Propomiel 2 %	+
Cocker noir et feu	Bilateral ulcerative otitis	Proteus et Streptococcus canis	Propomiel 2 %	Arrêt du traitement Inconditionnelle des AB chiens toujours sous AB depuis 4 mois
Cocker tricolore	Otite suppurée kératoséborréique	Proteus	Propomiel 2 %	+
Mixed breed	Otite KS Dysendocrinie		Propomiel 2 %	+ 15 j rechute puis traitement permanent
Shar pei	Suppurative otitis	Pseudomonas	Propomiel 10 % dilution	+ 60 j entretien 2 mois

DOGS AND CATS EXTERNAL EAR INFECTIONS AND APITHERAPY CLINICAL OBSERVATIONS

Discussion : Results

Clear improvement of symptoms on presented cases

Propolis and Honey mix appears to be more relevant

Excellent feed back from animal owners
often desperate by repeated failing treatments

No antibiotics used

DOGS AND CATS EXTERNAL EAR INFECTIONS AND APITHERAPY CLINICAL OBSERVATIONS

Discussion: cons

- Sticky hair

- Very rapid pain improvement, but longer treatments

- Galenic form needs to be improved

DOGS AND CATS EXTERNAL EAR INFECTIONS AND APITHERAPY CLINICAL OBSERVATIONS

Discussion: Perspectives

Work on galenic formulation

Work on the in vitro activity of honeys and propolis

Recruitment of cases with several colleagues

Use of an objective score to compare with conventional treatments

Example : “OTIS score 3”

4 items with score from 0 to 3 on erythema, hyperplasia, secretions, ulcerations. Maximum score 12. Very easy to use and compare.

DOGS AND CATS EXTERNAL EAR INFECTIONS AND APITHERAPY CLINICAL OBSERVATIONS

Conclusion

Decreasing antibiotic treatments in humans and animals has become a major health priority.

The use of beehive-based alternatives for the treatment of ear infections in domestic carnivores seemed very promising.

This pathology is related to a heavy consumption of antibiotics and responsible for the selection of multi-resistant germs.

However, more important scientific and clinical studies are needed to confirm these initial observation.