

DIAGNOSIS AND MANAGEMENT OF RECURRENT EXTERNAL OTITIS IN A FELINE: CASE REPORT OF NASOPHARYNGEAL POLYP

*DIAGNÓSTICO E MANEJO DE OTITE EXTERNA RECIDIVANTE EM FELINO:
RELATO DE CASO DE PÓLIPO NASOFARÍNGEO*

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SUMMARY

Recurrent external otitis in felines presents a clinical challenge due to its multifactorial nature, complicating differential diagnosis with potential associations to underlying systemic conditions, such as renal disease and the growing threat of antimicrobial resistance. The case study demonstrates the application of a holistic diagnostic approach, incorporating ear cytology, microbiological cultures, antimicrobial susceptibility testing and otoscopy, to identify the underlying etiology and determine the appropriate treatment.

KEY-WORDS: Feline clinic, ear infection, therapeutic management, otoendoscopy.

RESUMO

A otite externa recidivante em felinos é um desafio clínico devido à sua natureza multifatorial, dificultando o diagnóstico diferencial, com possível associação a doenças sistêmicas como a renal e à resistência antimicrobiana. O estudo de caso demonstra a aplicação de uma abordagem diagnóstica holística, com citologia auricular, culturas microbiológicas, perfil de sensibilidade antimicrobiana e otoendoscopia, para identificar a etiologia e definir o tratamento adequado.

PALAVRAS-CHAVE: Clínica de felinos, infecção auricular, manejo terapêutico, otoendoscopia.

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INTRODUCTION

The presence of nasopharyngeal polyps in felines presents additional challenges in the diagnosis and management of recurrent ear infections (LIMA et al., 2022). These generally benign growths can originate from inflamed and infected tissue of the upper respiratory tract, eventually extending to the middle and external ear (QUINTELA et al., 2020). Inadequate treatment can result in severe complications, such as auditory canal obstruction, tympanic rupture and even the spread of infections to adjacent structures, highlighting the importance of early detection and timely therapeutic intervention (KENNIS, 2013).

Antimicrobial treatment of ear infections in felines can also be challenging, especially due to the presence of pathogenic resistant bacteria such as *Pseudomonas* spp. which are common in the feline ear flora (ROY et al., 2011; SANTOS & GUIMARÃES, 2020). Appropriate selection of antimicrobial agents prevents the development of bacterial resistance and ensures a satisfactory therapeutic response (HIBLU et al., 2020). Additionally, integrated therapeutic approaches, including ear cleaning, topical therapy and, when necessary, surgical interventions may be required to control recurrent infections and prevent severe complications (ROY et al., 2011; LIMA et al., 2022).

Thus, this case study provides a detailed analysis of a feline presenting with symptoms of recurrent external otitis, highlighting the complexity of differential diagnosis, the importance of precise identification of etiological agents and the need for a personalized therapeutic approach that ultimately ensured satisfactory clinical outcomes.

CASE REPORT

In July 2021, a 10-month-old male mixed-breed cat was brought to the Invet Center Hospital in Limeira with complaints of excessive ear pruritus and the presence of a brownish biofilm in the ear canal, with symptom onset recently reported by the owners. On physical examination intense pruritus in the right ear, a brownish biofilm visible in the ear canal and sensitivity to auricular manipulation were observed. Cytology of the collected material revealed the presence of yeast and bacteria, predominantly *Pseudomonas* spp., leading to the performance of an antibiogram to determine the sensitivity of the isolated microorganisms. The antibiogram was performed following the standard protocol, where bacterial isolates were cultured on Mueller-Hinton agar and antimicrobial susceptibility was tested using the disk diffusion method according to Clinical and Laboratory Standards Institute (CLSI, 2021) guidelines. The results showed that the pathogens were sensitive to amikacin, ciprofloxacin, enrofloxacin, marbofloxacin and tobramycin. The initial treatment consisted of cleaning the ear canal with Phisio® Anti-odor (by Virbac) and oral administration of Zelotril® (enrofloxacin) for three days.

After starting the treatment, the cat showed a significant improvement in symptoms with a reduction

in itching and the ear biofilm. However, two weeks after the end of the treatment the symptoms returned indicating a recurrence of the infection and instability in resolving the case. A year later, the cat was taken to another specialist, a veterinary dermatologist, who requested a new culture and antibiogram, resulting in an antibiotic sensitivity profile similar to the previous examination. Treatment was initiated with cleaning using Phisio® Anti-odor and Auritop® (containing ciprofloxacin, ketoconazole, fluocinolone acetonide, and lidocaine hydrochloride) for 10 days, again observing an improvement in the clinical condition. The treatment was extended for months until apparent stability; however, at the end of 2023, the symptoms recurred.

A new discomfort in the cat's ear was noticed and upon evaluation a large amount of green purulent discharge and brownish biofilm was observed. A new culture and antibiogram, conducted privately and independently by the owners revealed resistance to several antibiotics, with the pathogens being sensitive to amikacin, ciprofloxacin, enrofloxacin, gentamicin and marbofloxacin. Consequently, a more intensive treatment was initiated with cleaning using Phisio® Anti-odor, application of Auritop® for 30 days and administration of Marbocyl®P (marbofloxacin), with one 5 mg tablet SID for 5 days.

The owners, dissatisfied with the unstable clinical condition of the animal, sought guidance from other specialists and decided to consult a professional specialized in ear issues. During the consultation with the veterinary specialist, it was informed that the recurrence of the problem could be related to an underlying cause such as polyps, neoplasia or other disorders of the ear canal and all necessary exams were scheduled for an otoendoscopy. Intense lipemia was detected in the patient's blood count and in the biochemical analysis the beginning of kidney disease was identified, with urea at 64 mg/dL (reference values of 10-46 mg/dL) and creatinine at 2.1 mg/dL (reference values of 0.7-1.8 mg/dL). Otoendoscopy revealed the presence of a polyp near the tympanum and a tomography was scheduled performed at Cedivet in Rio Claro – São Paulo, which both confirmed the presence of the polyp and its dimensions.

It was recommended to perform cardiological exams to assess the feasibility of the removal procedure via video otoscopy. With the cardiological results within normal limits, the surgery was performed at the veterinary specialist's clinic in Limeira and the polyp was removed intact (Figure 1). The histopathological report confirmed that the polyp was benign and non-neoplastic nasopharyngeal. After removal, treatment with Cilodex eye drops 0.5 mL/SID for 20 days was administered in the ear canal where the polyp was removed. Recently, the cat underwent a follow-up appointment, was discharged and showed excellent healing, with no biofilm present and no recurrence of symptoms to date.

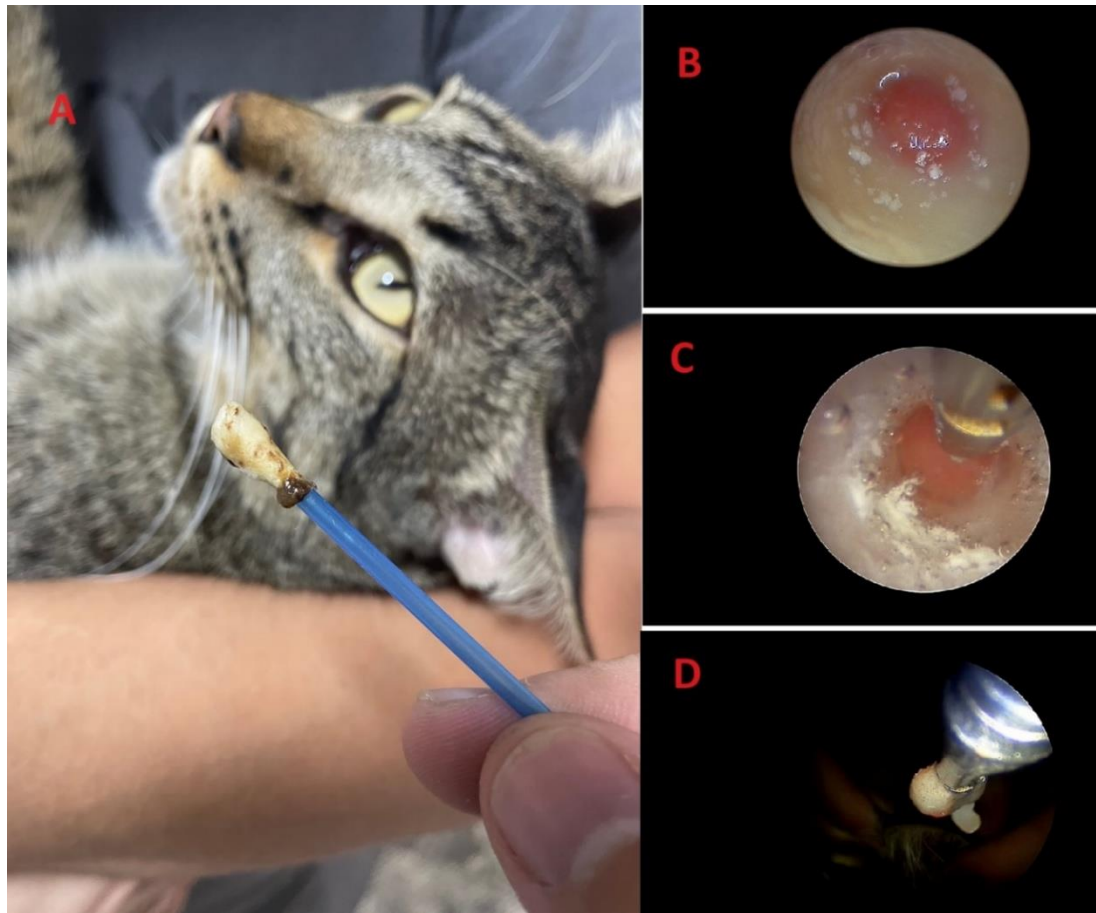


Figure 1 - In image A the patient is immobilized for the removal of the greenish purulent sample and brownish biofilm. In image B, the polyp is observed via video otoscopy; in C, the material is being grasped and in D the moment of removal.

DISCUSSION

The symptomatology of otitis in felines can be varied and often subtle, making early identification difficult for owners. The most common clinical signs include intense ear itching, frequent head shaking, head tilt to the affected side, abnormal ear discharge in color and odor, and pain upon palpation of the auricular region (KENNIS, 2013; MELO et al., 2014); and in more severe cases, hearing loss and signs of balance impairment can be observed (COSTA et al., 2009). Complications resulting from otitis inadequately treated can be severe, such as the progression of infection to the middle and inner ear, leading to tympanic ruptures, abscess formation and even systemic infections (WOODBRIDGE et al., 2012; PAULIN et al., 2013). The difficulty for owners to observe these symptoms is a critical factor, as often the signs are interpreted as normal behaviors or are masked by the reserved nature of cats. In this case report, this manifested as a constant concern on the part of the owners, who often doubted the effectiveness of the treatment due to the recurrence of clinical signs.

The manipulation of the ear of a cat with otitis can be painful, making cleaning and application of topical medications difficult (ROY et al., 2011; KENNIS, 2013). In the ears of these animals, there is a normal microbiota composed of a variety of fungi and bacteria, including species of *Malassezia* and

Staphylococcus, which coexist without causing diseases, but under certain conditions, these microorganisms can become opportunistic leading to infections (SANTOS; GUIMARAES, 2020). Pathogens like *Pseudomonas* spp., dominant in the ear of the cat in this case report, are Gram-negative bacteria, aerobic, and rod-shaped (bacilli), being particularly problematic first due to their intrinsic resistance to a wide range of antibiotics common in clinical practice and second due to their ability to form biofilms (DOS SANTOS, 2007; ARSEVSKA et al., 2018). In addition to this, such bacterial group also has additional resistance mechanisms, including the production of enzymes like beta-lactamases that degrade antibiotics and the modification of their molecular targets, further complicating the effective treatment of infections (JANGSANGTHONG et al., 2024).

The case evidenced a low efficacy of the initially offered antibiotic treatment, possibly due to the massive presence of *Pseudomonas* dominating the patient's ear microbiota. Administration of drugs such as Zelotril® and topical application of Phisio® Anti-odor and Auritop® showed transient results, with temporary improvements in symptoms. It is relevant to highlight that the use of these drugs, although providing temporary symptomatic relief, may have contributed to the selection and proliferation of more resistant strains,

a phenomenon known as selective pressure (FERREIRA; GRECELLÉ, 2022). Even with the use of marbofloxacin, which has bactericidal activity by inhibiting DNA gyrase, with a broad spectrum of action against gram-positive and gram-negative bacteria, and known for its efficacy in treating upper respiratory tract bacterial infections (MEUNIER, 2004); only temporary improvement of symptoms was observed.

The diligence and persistence of the owners in seeking an otology specialist to resolve the feline's case highlight the etiological relevance of discovering the nasopharyngeal polyp. Nasopharyngeal polyps in felines can arise due to various causes, including chronic inflammatory processes, such as recurrent otitis, which can result in the proliferation of fibrous tissue in the region (LIMA et al., 2022). Genetic factors, trauma, or viral infections, such as feline herpesvirus (FHV-1), can also contribute to the development of these lesions (QUINTELA et al., 2020). The complete removal of the polyp was a crucial step in treating the described case, as this lesion was likely contributing to the chronicity of inflammation and infection. The prolonged presence of this material could cause partial obstruction of the ear canal, interfering with proper ventilation and drainage of secretions, predisposing the animal to secondary infections and hindering the effectiveness of topical antimicrobial treatments.

It is commented that there is no direct relationship between the nasopharyngeal polyp and the presence of *Pseudomonas* in cats, however, it is important to consider that the polyp can create a favorable environment for the accumulation of secretions and debris, providing a suitable site for bacterial growth (CHALERMWATANACHAI et al., 2015). Thus, the presence of this mass may contribute to the chronicity of bacterial infections, as it offers an adequate substrate for bacterial multiplication and biofilm formation, making treatment difficult and favoring the recurrence of otitis. Therefore, the complete removal of the polyp was crucial not only to relieve physical obstruction in the ear canal but also to eliminate a potential reservoir of pathogenic bacteria and facilitate the resolution of ear infections.

While the role of microorganisms and nasopharyngeal polyps in the recurrence of otitis has been thoroughly discussed, it is also critical to consider the clinical implications of incipient renal insufficiency in the management of such cases. Even in its early stages, renal impairment can affect the animal's response to treatment, hindering the elimination of toxins and altering the pharmacokinetics of medications used in otitis treatment (BARTGES, 2019). Drugs such as antibiotics and anti-inflammatory agents may have their metabolism impaired, increasing the risk of adverse effects and further renal complications (PUTCHAKAYALA; HARITHA, 2024). Additionally, renal insufficiency may predispose animals to more persistent infections, as the immune system could be compromised, making otitis control more challenging. Therefore, in addressing such cases, it is crucial to closely monitor renal function and adjust treatment accordingly, considering both renal health and otitis management, to ensure a safe and effective long-term therapeutic approach for the animal.

CONCLUSION

Early detection and therapeutic intervention are essential to prevent complications such as ear canal obstruction and the spread of infections. An important limitation was the delay in diagnosing the polyp, possibly due to the lack of specialists in the field. It is recommended that, in similar cases, consultation with a specialist be sought. Additionally, imaging exams such as computed tomography could be more frequently recommended in routine clinical practice to facilitate early diagnosis. To optimize clinical outcomes and reduce recurrence, implementing preventive protocols and management strategies, such as regular monitoring and early interventions is crucial to ensure better quality of life for affected animals.

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