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Concurrent otoacariasis and flea allergy dermatitis in a juvenile Persian cat with successful management: A case report

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Abstract

A 3.5-month-old female Persian kitten was presented to the Teaching Veterinary Clinical Complex (TVCC), Veterinary College and Research Institute, Tirunelveli, Tamil Nadu with a history of scratching of ear, frequent head shaking, and progressive hair loss. On external examination revealed alopecia on facial region, dorsal thoracic region and extremities. Microscopic examination of ear swab samples confirmed the presence of *Otodectes cynotis*, while flea combing and skin evaluation revealed infestation with *Ctenocephalides felis*. Based on clinical and parasitological findings, a diagnosis of concurrent otoacariasis and flea allergic dermatitis was established. The kitten was treated with topical selamectin (6% w/v) spot-on formulation. Marked clinical improvement was observed following treatment, with resolution of pruritus and progressive hair regrowth. This case highlights the importance of early diagnosis, accurate identification of concurrent ectoparasitic infestations, and timely therapeutic intervention for successful management of otoacariasis associated with flea allergic dermatitis in juvenile cats.

Keywords: *Otodectes cynotis*, otoacariasis, Persian cat, *Ctenocephalides felis*, flea allergic dermatitis, selamectin

Introduction

Otodectes cynotis is a non-burrowing Psoroptid mite that inhabits the external ear canal of cats, feeding on epidermal debris and tissue fluids on the surface of the canal lining and inducing irritation and inflammation. Infestation commonly results in otitis externa characterized by erythema of the vertical and horizontal ear canals, intense pruritus, head shaking, and accumulation of dark brown ceruminous exudate; secondary bacterial and fungal infections are also frequently observed. In some cases, mites may migrate beyond the ear canal, causing ectopic infestations involving the head, neck, tail base, and occasionally the trunk, producing papulocrustous lesions resembling miliary dermatitis. Persian cats are considered predisposed due to conformational and environmental factors that may favor mite survival within the ear canal. Concurrently, flea infestation—most commonly caused by *Ctenocephalides felis*—is a major ectoparasitic problem in cats and a leading cause of flea allergic dermatitis. *C. felis* is a small, reddish-brown, laterally compressed, wingless insect measuring approximately 1-3 mm in length, possessing long hind legs adapted for jumping, piercing-sucking mouthparts, and characteristic genal and pronotal combs (ctenidia) that aid in species identification. Hypersensitivity to flea saliva can exacerbate pruritus and dermatological lesions, thereby complicating the clinical presentation. In this context, the present report describes a case of otoacariasis in a 3.5-month-old female Persian kitten complicated by concurrent flea infestation, emphasizing the importance of early diagnosis, precise identification of ectoparasites, and timely therapeutic management for successful clinical resolution

Case History and Clinical Observation

A 3.5-month-old Persian kitten was presented to the Teaching Veterinary Clinical Complex

(TVCC), Veterinary College and Research Institute, Tirunelveli with a history of intense pruritus, frequent head shaking and progressive hair loss. The owner reported that the lesions had been progressively worsening over the past few weeks. On general physical examination, the kitten appeared dull with pale mucous membranes. The rectal temperature was recorded as 101.5 °F and the heart rate was 140 beats per minute. Clinical evaluation revealed the presence of ceruminous exudate within the external ear canal along with crusts and excoriations at the tips of the ears. Dermatological examination showed scabs with patchy alopecia over the dorsal trunk. The kitten exhibited severe pruritus particularly involving the distal portions of the limbs, which appeared disproportionate to the number of fleas observed. Detailed examination further revealed the presence of actively biting fleas distributed over the dorsal trunk, neck and base of the tail (Fig. 1).

Clinical examination

Clinical evaluation revealed abundant dark brown ceruminous exudate within the external ear canals, along with crusts and excoriations at the tips of the ears. Dermatological assessment showed scab formation with patchy alopecia over the dorsal trunk. Severe pruritus was observed, particularly affecting the distal portions of the limbs, which was disproportionate to the apparent number of fleas present. Detailed dermatological examination further confirmed the presence of actively biting fleas distributed over the dorsal trunk, neck, and tail base.

Materials and Methods

Ear mite Collection

Ceruminous exudate was collected from the external ear canal using a sterile cotton swab. The sample was processed using 10% NaOH digestion and centrifugation to concentrate the ectoparasites. A drop of sediment was examined under a microscope.

Flea collection

Visible fleas were collected from the fur using forceps; to facilitate detailed morphological study, the slides were prepared. Specimens were dehydrated through ascending grades of alcohol (70%, 90% and absolute alcohol), cleared in Xylol and mounted using DPX mountant as per the method described by Taylor *et al.*

Results

Examination revealed oval shaped mites with short, unsegmented pedicels with wine glass shaped and legs projecting beyond body margin. These features confirmed species as *Otodectes cynotis* (Soulsby, 1982; Bowman 2020) [6, 1].

Microscopic examination (10x) revealed flea with a characteristic genal ctenidia, pronotal ctenidia and elongated head. Based on these morphological keys (soulsby, 1982) [6] the parasite identified as *Ctenocephalides felis*. Based on detailed clinical and parasitological examinations, the case was diagnosed as concurrent otoacariasis and flea allergic dermatitis (FAD). Microscopic identification of *Otodectes cynotis* from ear swab samples and confirmation of *Ctenocephalides felis* through flea combing supported the dual parasitic etiology. The presence of crusting, scaling, and excoriations further suggested secondary bacterial and possible fungal involvement complicating the primary ectoparasitic infestation.



Fig 1: A 3.5-month-old female Persian kitten presented with otoacariasis and flea allergic dermatitis, showing pruritus, alopecia and dermatological lesions.



Fig 2: Progressive hair loss with crusty lesions and severe pruritus involving the ear tips and distal portions of the limbs.



Fig 3: *Ctenocephalides felis* observed on microscopic examination under (10×) magnification.



Fig 4: *Otodectes cynotis* (ear mite) observed on microscopic examination (40×) from an ear swab sample.

Discussion

Concurrent ectoparasitic infestations with associated hypersensitivity reactions are common in feline dermatology; however, atypical lesion distribution may complicate diagnosis. In the present case, the coexistence of otoacariasis and flea allergic dermatitis produced a multifactorial pruritic syndrome characterized by classical otic manifestations along with cutaneous lesions extending to the distal limbs. Infestation with *Otodectes cynotis* typically results in ceruminous otitis externa, head shaking, and localized pruritus affecting the head and neck region. However, hypersensitivity to mite antigens may lead to generalized pruritus and secondary self-induced trauma beyond the ear canal. Similarly, Flea allergic dermatitis develops due to immediate and delayed hypersensitivity responses to antigens present in flea saliva and represents one of the most common allergic dermatitis in cats. Although lesions are classically distributed over the lumbosacral region, tail base, and caudomedial thighs, atypical presentations including distal limb involvement may occur, particularly in highly sensitized or chronic cases. In this case, distal limb lesions were most likely secondary to excessive scratching and grooming due to intense pruritus rather than direct parasitic localization. Such presentations may mimic dermatophytosis, notoedric mange, or psychogenic alopecia, thereby emphasizing the need for a systematic diagnostic approach. Definitive diagnosis was achieved through microscopic detection of ear mites and confirmation of flea infestation. Successful management requires simultaneous treatment of all contributing factors, including acaricidal therapy, comprehensive flea control (animal and environment), and management of secondary infections. Incomplete treatment of any component may result in persistent or recurrent clinical signs. These findings are consistent with established Veterinary dermatological literature, which emphasizes that overlapping pruritic disorders in cats often present with variable and misleading lesion distributions.

Treatment and Management

The kitten was treated with a single topical application of Selamectin (6% w/v) spot-on solution administered at a dose rate of 6 mg/kg body weight. The formulation was applied at the base of the neck between the shoulder blades to prevent self-licking and ensure proper absorption. The owner was advised to restrict bathing for at least 48 hours post-application and to prevent the animal from grooming the treated site. Environmental hygiene and flea control measures were also recommended to prevent reinfestation. Upon re-evaluation after two weeks, marked clinical improvement was observed, including complete cessation of pruritus, reduction in ceruminous discharge, healing of cutaneous lesions, and progressive hair regrowth.

Conclusion

This case highlights an atypical presentation of concurrent Otoacariasis and flea allergic dermatitis in a Juvenile Persian cat, manifesting with both otic and distal limb lesions. Early diagnosis through clinical and parasitological evaluation, combined with appropriate topical therapy and environmental management, resulted in successful clinical resolution. Recognition of such overlapping and atypical presentations is essential to avoid misdiagnosis and ensure effective treatment in feline dermatological practice.

Conflict of Interest

Not available

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Not available

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