

## Sebaceous Adenitis in a Cat

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### ABSTRACT

**Background:** Sebaceous adenitis is an inflammatory, dyskeratotic, and chronic disorder, characterized by the degeneration and post-inflammatory atrophy of sebaceous gland, which rarely affects cats. The objective of this paper is to report a case of sebaceous adenitis in a cat, located in the region of Curitiba, Paraná, Brazil.

**Case:** A 12-year-old female cat, crossbreed, with hypotrichosis, alopecia and moderate to intense itching in the dorsal thorax region, limbs and face, which were evolving during a month. Dermatological exams were done, as well as trichogram, fungal culture, sticky-tape test, skin scraping, and parasitological assessments of cerumen, and all of them were normal. Histopathological examination revealed hair follicles at all stages of development, some showing hyperkeratosis with cystic dilation and complete absence of sebaceous glands. In periadnexal region, it showed mild inflammatory infiltrate composed by lymphocytes, histiocytes and neutrophils, which legitimated a definitive diagnosis of sebaceous adenitis. The treatment was made using emollient shampoo, ciclosporin and emollient product based on fatty acids and ceramides, and after one month, the lesions, erythema and pruritus regressed. Due to the clinical improvement, it was possible to keep the animal with ciclosporin (5.0 mg/kg, p.o, every two days) and Allerderm spot-on (once weekly), obtaining positive results too.

**Discussion:** SA was already described in dogs, cats, rabbits, horses and humans. In cats, diseases involving sebaceous glands are rarely described, and the dermatological changes commonly found includes chronic progressive form with non-itchy scaling, crusting, alopecia and skin depigmentation in regions of the face, cervical and trunk. Considering the case reported, the animal did not present any comorbidity and lesions predominated in the face (auricles, mentonian and perioral region), extending the dorsal midline, thoracic and pelvic limbs. The clinical signs presented were very similar to those described in dogs, with the presence of hypotrichosis, alopecia, follicular cylinders, comedones, scaling and bilateral otitis externa. Pruritus was moderate to intense, even when there was absence of secondary infection, and it is possibly associated with skin and coat xerosis. In the histopathological, acute lesions show granulomatous inflammatory and periadnexal pyogranulomatous reactions around the sebaceous gland, while the chronic lesions may attest the absence of sebaceous gland and focal periadnexal fibrosis. In this case, the findings were periadnexal fibrosis and absence of sebaceous glands were prevailed, which indicates that sebaceous adenitis diagnosis in cat is not been early discovered. Treatment for sebaceous adenitis consists of emollient, moisturizer and humectant therapy associated with supplementation of essential fatty acids, and in the case described, it was also necessary the use of ciclosporin, in order to control the disease. In a preliminary study, the use of ciclosporin in dogs with sebaceous adenitis provided a significantly inflammation reduction and improved clinical status in 60% of the cases. There are evidences that regeneration of sebaceous gland is best achieved with the use of ciclosporin, even when it its administration is isolate or combined with topical therapy. Although it is atypical in cats, sebaceous adenitis must be considered as a differential diagnosis for inflammatory diseases with similar clinical signs.

**Keywords:** feline, skin, seborrhea, sebaceous glands.

## INTRODUCTION

Sebaceous glands are epithelial structures placed at the isthmus region of hair follicles, responsible for producing the lipid emulsion, which had the function of hydrate and protect the surface of the skin and coat, helping to maintain skin softness and hair's flexibility [2]. Sebaceous adenitis (SA) is a disease with a chronic inflammatory disposition that affects sebaceous glands, likewise the synthesis and composition of lipid emulsion secreted. Consequently, skin and coat dryness will occur [15]. Although it has idiopathic origin, in standard poodles and akitas, sebaceous adenitis can be inherited through an autosomal recessive gene with variable expression [9,13]. A hypothesis for its etiopathogeny is the one that describes a keratinisation disorder in which modifies sebaceous composition, obstructing the ducts and triggering the inflammatory process or consider the possibility of an autoimmune response against antigens sited in glands and ducts, stimulating inflammation and conducting to its destruction [7,12]. Xerosis, scaling, silvery scales that adheres to the coat and skin, follicular cylinders and comedones are the characteristics of SA. Follicular hyperkeratosis has been associated with alopecia, folliculitis, furunculosis [13]. Animals affected with SA are predisposed to develop bacterial infections and secondary *Malassezia* sp., which contributes to the appearance of pruritus [9].

Considering the fact that this infection is rarely describe in feline species, this case report has the objective to present the clinical, dermatological and therapeutic aspects of sebaceous adenitis in a cat.

## CASE

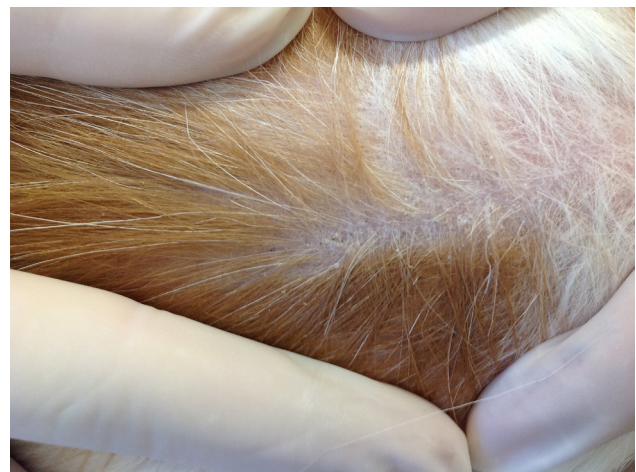
A 12-year-old female cat (crossbreed) with a clinical history based on hypotrichosis and alopecia, associated with moderate to intense pruritus in the dorsal thorax region, limbs and face, which were evolving during a month.

The dermatological exam has demonstrated bilateral otitis externa, hypotrichosis and alopecia, xerosis, multiple psoriasiform scales and cerato-sebaceous sediment adhered to skin and coat in in the dorsal thorax region, plus thoracic and pelvic limbs (Figures 1). In the eyelids, mentonian and perioral region was observed erythema, scaling, hypotrichosis, follicular cylinders and comedones (Figures 2a and 2b).

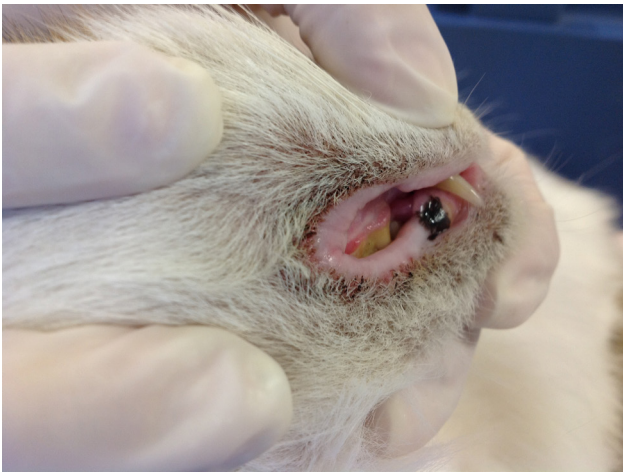
Trichogram, fungal culture, sticky-tape test, skin scraping in order to search for parasites, parasitological assessments of cerumen and FIV/FeLV testing presented negative results.

Histopathological examination of skin samples has shown epidermis with laminar orthokeratosis and dilatation of some follicular ostia lead by infundibular hyperkeratosis. In the superficial dermis, there was edema and monomorphonuclear inflammatory infiltrate in perivascular pattern. The hair follicles appeared active and in all stages of development, some exhibiting hyperkeratosis and cystic dilation. There was a complete absence of sebaceous glands. In periadnexal region, it showed inflammatory infiltrate composed of lymphocytes, histiocytes and neutrophils. Histopathological findings legitimated a definitive diagnosis of sebaceous adenitis (Figure 3).

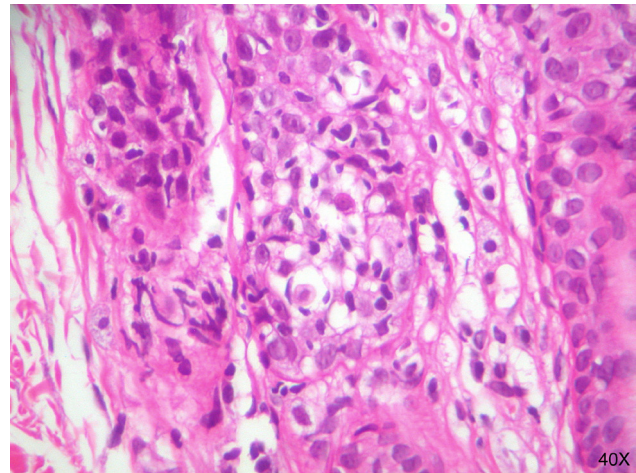
Treatment was established following the forward description: emollient shampoo (once weekly; Hypoallergenic Vetriderm<sup>1</sup>), ciclosporin (5.0 mg/kg p.o, once daily), and emollient product based on fatty acids and ceramides (once weekly; Allerderm spot-on<sup>2</sup>) with regression of lesions, erythema and pruritus after a month of treatment (Figure 4). Later on, after three months of treatment, there was new hair growth in areas of injury and total reduction of scaling and follicular cylinders. It was applied the medication on alternate days and Allerderm spot-on was maintained once weekly. Due to the clinical improvement, it was possible to keep the animal with ciclosporin (5.0 mg/kg, p.o, every two days) and Allerderm spot-on (once weekly), obtaining positive results too.



**Figure 1.** A 12-year-old female cat with sebaceous adenitis. Xerosis, scaling and cerato-sebaceous sediment in the dorsal thorax region.



**Figure 2.** A 12-year-old female cat with sebaceous adenitis. Eyelids with hypotrichosis and multiple follicular cylinders (a). Perioral region with scaling, hypotrichosis, follicular cylinders and comedones (b).



**Figure 3.** Skin. A twelve year old female cat with sebaceous adenitis. Higher magnification of site of sebaceous gland with histiocytes, lymphocytes and neutrophils (HE, 40x).



**Figure 4.** A twelve year old female cat with sebaceous adenitis. Pictur after treatment with ciclosporin, emollient shampoo and Allerderm spot on®. It is possible absence of xerosis, scaling and cerato-sebaceous sediment in the dorsal thorax region.

## DISCUSSION

SA is an inflammatory disease of sebaceous glands which mainly affects dogs [3], however it was already described in cats [1,11], rabbits [16], horses [8], and humans [6,10].

In dogs, the dermatological changes commonly found in this condition includes tegument dyskeratosis with psoriasiform and ptiliasiform scaling, comedones, alopecia and hypotrichosis, follicular cylinders and dry hair [3]. In rabbits, sebaceous adenitis appears as a progressive and chronic process of non-itchy scaling in the face and cervical region, evolving to a generalized exfoliative dermatitis with alopecia and leucoderma [16]. In relation to horses, there are reports that this disease manifests in the form of non-itchy patches with scaling crusts, alopecia and leukoderma in periocular, nasal bridge e nostril areas, and it becomes generalized throughout the years [8].

In relation to cats, diseases involving sebaceous glands are rarely described. In a study of 2012, ten cats received a diagnosis of dysplasia of the sebaceous gland, and nine of them were kittens [17]. Few cases of sebaceous adenitis in cats were reported, and on those animals the disease was manifested in a chronic progressive form with non-itchy scaling, crusting, alopecia and skin depigmentation in regions of the face, cervical and trunk [1,11]. Histopathology revealed pyogranulomatous perifolliculitis with no sebaceous glands and ortocheatosis [11].

Considering the case reported, the animal did not present any comorbidity and lesions predominated in the face (auricles, mentonian and perioral region), extending the dorsal midline, thoracic and pelvic limbs. The clinical signs presented were very similar to those described in dogs, with the presence of hypotrichosis,

alopecia, follicular cylinders, comedones, scaling and bilateral otitis externa [16]. Pruritus was moderate to heavy, even when there was absence of secondary infection, and it is possibly associated with skin and coat xerosis [12].

In this research, histopathological findings were similar to those described in dogs [4, 12]. Acute lesions show granulomatous inflammatory and periadnexal pyogranulomatous reactions around the sebaceous gland, while the more chronic lesions may attest the absence of sebaceous gland and focal periadnexal fibrosis [8,13] In the present study, periadnexal fibrosis and absence of sebaceous glands were prevailed, which indicates that sebaceous adenitis diagnosis in cat is not been early discovered.

SA is usually unresponsive to treatment with anti-inflammatory doses of glycocorticoids [1]. Treatment for sebaceous adenitis consists of emollient, moisturizer and humectant therapy associated with supplementation of essential fatty acids, and in the case described, it was also necessary the use of ciclo-

sporin (5 mg/kg/BID), in order to control the disease. Ciclosporin has shown efficacy on treatment of sebaceous adenitis in doses of 5.0 to 10 mg/Kg [5]. In a preliminary study, the use of ciclosporin in dogs with sebaceous adenitis provided a significantly inflammation reduction and improved clinical status in 60% of the cases [5]. There are evidences that regeneration of sebaceous gland is best achieved with the use of ciclosporin, even when it its administration is isolate or combined with topical therapy [5]. Disorders of the digestive tract are the most common side effects in cats, like vomiting and diarrhea [14]. There are also reports of anorexia, sneezing, lethargy, and weight loss [14], symptoms which has no occurrence on this study.

#### MANUFACTURERS

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**Declaration of interest.** The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

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