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ATOPIC DERMATITIS IN SHIH-TZU: CASE REPORT

DERMATITE ATÓPICA EM SHIH-TZU: RELATO DE CASO

DERMATITIS ATÓPICA EN SHIH-TZU: REPORTE DE CASO

https://doi.org/10.56238/sevened2025.029-096

Maria Eduarda Ramalho Lopes[1], Marianna Gabriela Cota Reis e Reis[2], Marielly Maria Almeida Moura[3], Daniel Ananias de Assis Pires[4], Otaviano de Souza Pires Neto[5], Renê Ferreira Costa[6], Juliano Santos Siqueira[7], Matheus Pereira da Silva[8], Emerson Márcio Gusmão[9], Maria Cecilia Silva Fonseca[10], Ivete Mariana Pereira de Souza[11], Maria Cecilia Silva Fonseca[12] Brisa Lafeta Rabelo Santos[13], José Roberto Maciel Menezes Junior[14]

ABSTRACT

Canine atopic dermatitis (CAD) is a chronic, immune-mediated, multifactorial inflammatory disease that represents one of the main challenges in veterinary dermatology. It is characterized by an intense immune response to environmental allergens, associated with skin barrier dysfunction and genetic predisposition. Clinical signs include persistent pruritus, erythema, alopecia, and secondary infections, with individual variations in disease presentation and progression. Diagnosis is clinical, based on the exclusion of other pruritic dermatoses and the use of specific criteria, aided by complementary exams. Treatment requires a multimodal approach, including immunomodulatory agents, topical care, hypoallergenic diets, and environmental control. Continuous management and owner compliance are essential to maintain the patient's quality of life. New therapies are being studied, reinforcing the importance of ongoing veterinary training.

Keywords: Pruritus. Immunomediation. Oclacitinib. Allergens.

RESUMO

A dermatite atópica canina (DAC) é uma enfermidade inflamatória, crônica, imunomediada e de natureza multifatorial, que representa um dos principais desafios da dermatologia veterinária. Caracteriza-se por intensa resposta imunológica a alérgenos ambientais, associada à disfunção da barreira cutânea e predisposição genética. Os sinais clínicos incluem prurido persistente, eritema, alopecia e infecções secundárias, com variações

[1] Undergraduate student in Veterinary Medicine. Faculdades Integradas do Norte de Minas (FUNORTE).
[2] Graduated in Veterinary Medicine.
[3] Dr. in Plant Production. Faculdades Integradas do Norte de Minas (FUNORTE).
[4] Dr. in Animal Production. Faculdades Integradas do Norte de Minas (FUNORTE).
[5] Dr. in Animal Production. Faculdades Integradas do Norte de Minas (FUNORTE).
[6] Doctorate in Animal Production. Faculdades Integradas do Norte de Minas (FUNORTE).
[7] Master in Animal Production. Faculdades Integradas do Norte de Minas (FUNORTE).
[8] Master's student in Animal Production. Universidade Estadual de Montes Claros (UNIMONTES).
[9] Master in Animal Biology. Universidade Estadual de Montes Claros (UNIMONTES).
[10] Undergraduate student in Veterinary Medicine. Faculdades Integradas do Norte de Minas (FUNORTE).
[11] Master's student in Plant Production. Universidade Estadual de Montes Claros (UNIMONTES).
[12] Graduated in Veterinary Medicine. Faculdades Integradas do Norte de Minas (FUNORTE).
[13] Undergraduate student in Veterinary Medicine. Universidade Estadual de Montes Claros (UNIMONTES).
[14] Undergraduate student in Veterinary Medicine. Universidade Estadual de Montes Claros (UNIMONTES).

individuais na apresentação e evolução da doença. O diagnóstico é clínico, baseado na exclusão de outras dermatoses pruriginosas e no uso de critérios específicos, auxiliado por exames complementares. O tratamento exige abordagem multimodal, incluindo agentes imunomoduladores, cuidados tópicos, dietas hipoalergênicas e controle ambiental. O manejo contínuo e a adesão do tutor são fundamentais para manter a qualidade de vida dos pacientes. Novas terapias vêm sendo estudadas, reforçando a importância da atualização constante do médico-veterinário.

Palavras-chave: Prurido. Imunomediação. Oclacitinib. Alérgenos.

RESUMEN

La dermatitis atópica canina (DAC) es una enfermedad inflamatoria crónica, inmunomediada y multifactorial que representa uno de los principales desafíos en dermatología veterinaria. Se caracteriza por una intensa respuesta inmunitaria a alérgenos ambientales, asociada a disfunción de la barrera cutánea y predisposición genética. Los signos clínicos incluyen prurito persistente, eritema, alopecia e infecciones secundarias, con variaciones individuales en la presentación y progresión de la enfermedad. El diagnóstico es clínico, basado en la exclusión de otras dermatosis pruriginosas y el uso de criterios específicos, con la ayuda de exámenes complementarios. El tratamiento requiere un enfoque multimodal, que incluye agentes inmunomoduladores, cuidado tópico, dietas hipoalergénicas y control ambiental. El manejo continuo y el cumplimiento del propietario son esenciales para mantener la calidad de vida del paciente. Se están estudiando nuevas terapias, lo que refuerza la importancia de la capacitación veterinaria continua.

Palabras clave: Prurito. Inmunomediación. Oclacitinib. Alérgenos.

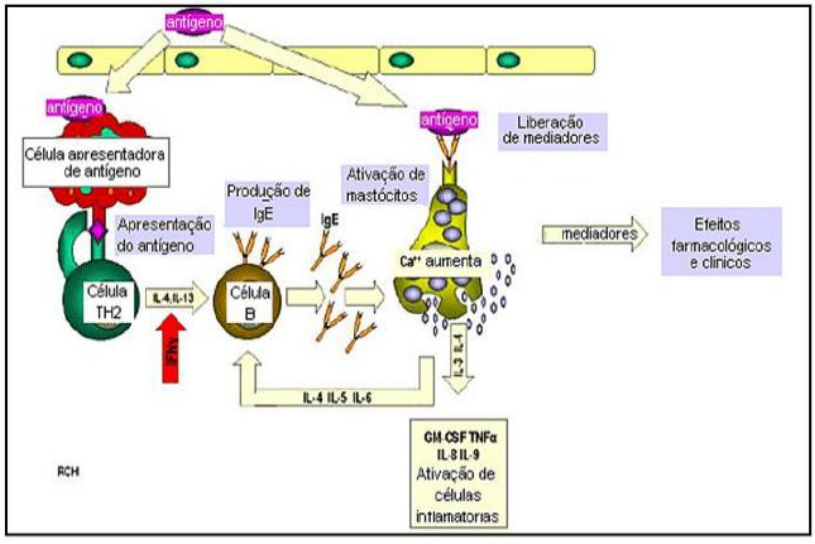
1 INTRODUCTION

Canine atopic dermatitis (CAD) is a chronic, immune-mediated, multifactorial inflammatory disease that affects the skin of genetically predisposed dogs. This condition represents one of the main challenges of veterinary dermatology, both because of the clinical impact on the quality of life of patients and because of the complexity of its diagnosis and therapeutic management (Barbosa; Almeida; Barros, 2024). CAD is the result of the interaction between genetic predisposition, skin barrier dysfunction, and exacerbated immune response to common environmental allergens, such as house dust mites, pollens, fungal spores, and other elements present in the environment (Solomon; Would; Pimpão, 2012).

The pathogenesis of CAD involves, among other mechanisms, an alteration in the integrity of the epidermis, especially in the layer, which results in greater skin permeability to external agents. This fragility of the skin barrier facilitates the penetration of allergens, which are processed by Langerhans cells and presented to T lymphocytes. This process triggers a Th2 immune response (figure 1) with the production of inflammatory cytokines and increased immunoglobulin E (IgE) synthesis. The subsequent activation of mast cells and eosinophils culminates in the release of histamine, prostaglandins, and leukotrienes, which are responsible for the characteristic clinical signs of the disease, such as intense pruritus, erythema, alopecia, and secondary infections (Sanabri; Brook; Ribeiro, 2022).

Figure 1

Immune response reaction

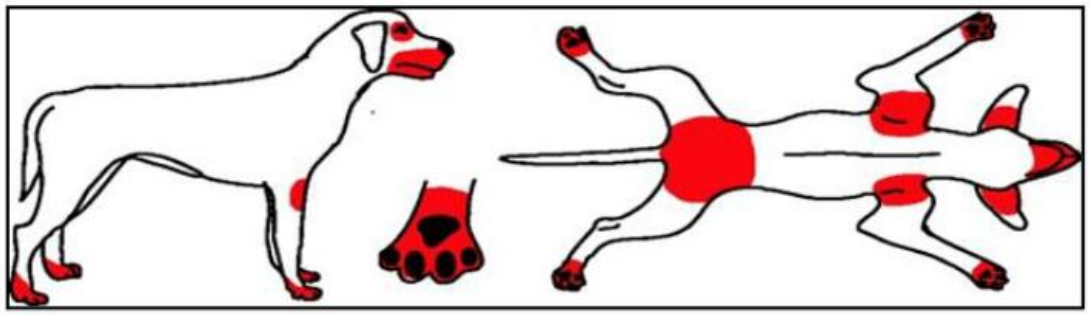


Source: Microbiologia e Imonulogia On-line, 2013.

Several breeds have a greater genetic predisposition to CAD, including Shih-Tzu, Lhasa Apso, West Highland White Terrier, Labrador Retriever, Golden Retriever, Pug, among others. However, mixed-breed dogs can also be affected (Costa; Alves, 2024). It is important to emphasize that the clinical manifestation of CAD can vary widely among individuals, with pruritus being the most constant sign and often the first to be noticed by the owner. The most commonly affected regions include the face, ears, armpits, abdomen, inguinal region, and interdigital spaces (figure 2) (Cavalcante, 2024).

Figure 2

Frequent localization of clinical manifestations and pruritus related to CAD



Source: Cavalcante, 2024.

The diagnosis of CAD is eminently clinical, based on the exclusion of other pruritic dermatological diseases, such as allergic dermatitis to the bite of ectoparasites (ECAD), food hypersensitivity, pyoderma, primary seborrhea, and dermatophytosis. The criteria proposed by Favrot et al. (2010) have been widely used to guide clinical diagnosis, although they are not absolute (Barbosa; Almeida; Barros, 2024). Complementary tests, such as skin scraping, cytology, bacterial culture, otological evaluation, and intradermal or serological allergy tests, are essential to reinforce the diagnosis and guide treatment (Silva; Brook; Ribeiro, 2021).

CAD does not have a definitive cure, and its control requires a multimodal and individualized approach. Therapeutics include controlling pruritus and inflammation with agents such as oclacitinib, cyclosporine, or corticosteroids, as well as adjuvant measures such as the use of dermatological shampoos, essential fatty acids, antibacterials, and topical or systemic antifungals in cases of secondary infections (Cavalcante, 2024). Apoquel® (oclacitinib), for example, is a selective Janus kinase 1 (JAK1) inhibitor, which blocks the signal transduction of inflammatory cytokines involved in CAD. It has rapid clinical efficacy

and an adequate safety profile in prolonged treatments, being a first-line choice in many cases (Martins, 2017; Pacheco, 2017).

In addition to pharmacological treatment, environmental modulation is essential. It is recommended to avoid exposure to possible allergens, whenever possible, as well as to perform allergen-specific immunotherapy, when allergy tests identify causal allergens (Alcantara; Salvarani; João, 2022). Another important component of the approach is the elimination diet with hypoallergenic foods, indicated to rule out food hypersensitivity as an aggravating or primary factor, but often neglected by tutors for financial, practical or adherence reasons (Sanabri; Brook; Ribeiro, 2022). The management of CAD is continuous and may require frequent adjustments according to the patient's clinical evolution. The education of the responsible person regarding the chronic nature of the disease, its recurrence and the importance of adherence to the therapeutic protocol are essential to keep the animal with a satisfactory quality of life and prevent serious outbreaks of the disease (Alcantara; Salvarani; João, 2022).

Finally, CAD represents one of the biggest challenges in the small animal clinic, requiring a judicious, empathetic and up-to-date approach from the veterinarian. With the advancement of research in the area, new immunological and pharmacological therapies have emerged as promising alternatives for the management of this disease, making specialized and continuous follow-up indispensable for the effective control of cases (Sanabri; Brook; Ribeiro, 2022; Coast; Alves, 2024).

2 CASE REPORT

The clinical care was carried out on March 15, 2025, at the Veterinary Office. The patient, a 6-year-old male Shih-Tzu neutered dog, was taken to the consultation with intense itching and signs of skin discomfort. The owner reported that, approximately six months ago, she noticed the animal frequently licking its paws and insistently scratching regions such as the armpits, groin and area around the eyes. According to the report, the animal had already undergone previous consultations, where therapeutic baths and the use of Prednisone were prescribed, however, there were recurrent and more intense recurrences, the episodes occurred mainly at night or after exposure to the external environment, even if for short periods.

It was reported that the animal resides exclusively in a home environment, without access to the street, living with another dog, also without clinical signs. The residence has

ceramic floors, a backyard with soil, grass and potted ornamental plants. The environment is regularly sanitized and there has been no recent history of ectoparasite infestation. The animal was submitted to monthly preventive control with antiparasitic Afoxolaner and was fully vaccinated and updated. He fed exclusively on Premium feed. During the consultation, a general physical and dermatological examination was performed. The patient had alertness, 38.7 °C, with a heart rate of 96 bpm and a respiratory rate of 28 rpm. Dermatological examination revealed areas of erythema, localized alopecia, mild desquamation, and hyperpigmentation in the inguinal, axillary, interdigital, and periorbital regions. The injuries were associated with constant licking and evident discomfort of the animal. The ear canals showed the presence of yellowish-brown secretion, with a slight odor, suggesting bilateral otitis. At the time of the consultation, a cutaneous cytology was performed, where the presence of yeasts of the genus *Malassezia* and bacterial cocci in moderate quantity and a superficial and deep skin scraping was observed, presenting a negative result for mites.

An auricular cytology was performed, where the presence of *Malassezia yeasts* and coccoid bacteria was noted in small quantities. Based on the history, clinical signs and complementary tests, a diagnostic suspicion of Canine Atopic Dermatitis (CAD), associated with secondary fungal otitis externa, was established. During the consultation, it was explained to the tutor that CAD is a chronic inflammatory condition, with an allergic basis, with a strong genetic predisposition, characterized by hypersensitivity to environmental allergens such as dust, mites, pollen and fungi. For confirmation and better management of the condition, it was suggested to perform an intradermal allergy test as well as the introduction of a hypoallergenic exclusion diet, in order to identify a possible associated food allergy. However, the tutor refused to perform both procedures, alleging difficulty in adhering to the diet. In view of the refusal, it was decided to institute symptomatic treatment, focusing on reducing pruritus, controlling inflammation, and managing secondary infections. The therapeutic protocol adopted was Apoquel® 3.6 mg, 1 BID tablet for 14 days, followed by SID as a maintenance dose, therapeutic baths with chlorhexidine-based shampoo and moisturizers

dermatological 2 times a week. Cortavance® with interdigital application and in the areas of greatest pruritus every 48 hours for 20 days and Easotic® otological solution, 5 BID drops for 10 days, followed by use 1x a week as maintenance for 1 month.

The tutor was instructed about the chronic nature of the disease, the need for regular monitoring, environmental control and the possibility of adjustments in treatment depending on the clinical response. It was recommended to return after 15 days for reassessment and new cytology, in addition to scheduling monthly follow-ups for long-term control.

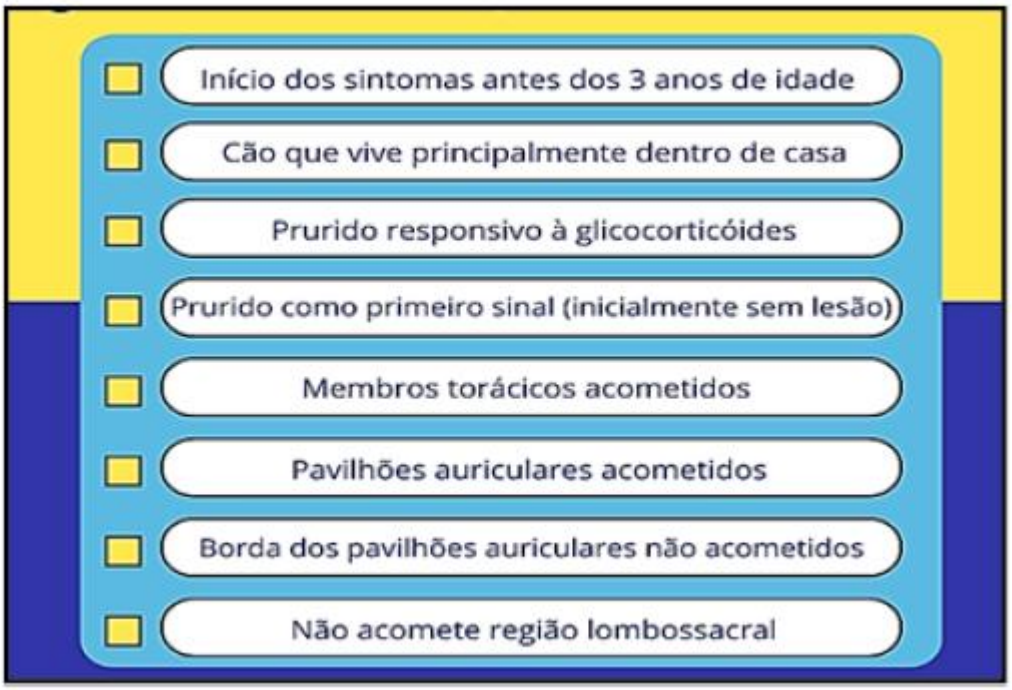
At the follow-up visit, after 15 days, the patient showed significant improvement in pruritus and inflammatory lesions, with regression of erythema and normalization of ear sensitivity. The owner reported an improvement in the animal's behavior, with reduced licking of the paws and greater overall comfort. The treatment was maintained with a focus on stabilizing the condition and preventing recurrences, with the therapeutic plan of, after improvement of the otitis condition and other lesions resulting from pruritus, to maintain only Apoquel in continuous use, in dose and frequency of maintenance.

3 CASE DISCUSSION

Canine Atopic Dermatitis (CAD) is one of the most frequent dermatological diseases in small animal clinics. It is a chronic and pruritic inflammatory disease, with a genetic basis, triggered by a hypersensitivity reaction to environmental allergens, such as house dust mites, pollens, fungi, and epidermal particles (Costa; Alves, 2024). The diagnosis of CAD is predominantly clinical, based on the exclusion of other skin diseases and the response to treatment, as described by several authors (Cavalcante, 2024). In the case presented here, the patient presented a condition compatible with CAD, including pruritus in regions of difficult access, erythema, alopecia, and desquamation, which are considered classic signs of the disease. Such manifestations are in accordance with the clinical diagnostic criteria proposed by Favrot et al. (2010) (figure 3), and discussed by Alcantara, Salvarani and João (2022), who emphasize the importance of detailed anamnesis, location of lesions and response to immunomodulatory treatments as parameters for confirming the diagnosis.

Figure 3

Fravot criteria for the diagnosis of canine atopy



Source: Derma Conecta, 2023.

Racial predisposition should also be considered, since Shih-Tzu dogs have a higher incidence of dermatological diseases, in addition to anatomical changes such as narrow ear canals and dense coat, which favor recurrent ear infections. The presence of *Malassezia* and cocci in cutaneous and auricular cytology reinforces the diagnosis of secondary infection, a common condition in atopic animals that have skin barrier impairment (Alcantara; Salvarani; João, 2022). Allergy testing, both intradermal and serological testing, is recommended to identify specific allergens and enable allergen-specific immunotherapy. However, in this case, the owner's refusal made the adoption of this strategy unfeasible, limiting the etiological control of the process (Martins, 2017). Likewise, not following the elimination diet compromised the differential diagnosis of food hypersensitivity, an important triggering or aggravating factor for pruritus (Cavalcante, 2024).

The therapy instituted was based on the clinical control of signs and associated opportunistic infections. The use of oclacitinib (Apoquel®), a selective JAK1 inhibitor, has been shown to be effective and safe in the control of pruritus associated with CAD, with rapid and sustained action, as reported by Pacheco (2017) and corroborated by Costa and Alves

(2024). The use of shampoos with antiseptic and moisturizing action, in conjunction with topical corticosteroid therapy and otological formulations, is also recommended to maintain skin integrity and control opportunistic microorganisms (Alcantara; Salvarani; João, 2022). Despite the positive clinical response in the short term, it is important to emphasize that CAD has no definitive cure, requiring periodic follow-up and constant reassessment of the therapeutic approach. The case highlights the importance of advising the owner about the chronic nature of the disease and the need for multimodal and continuous management for effective long-term control (Costa; Alves, 2024).

4 CONCLUSION

The clinical case discussed highlights the complexity involved in the diagnosis and management of Canine Atopic Dermatitis (CAD), a multifactorial, chronic and relapsing condition that requires an individualized and continuous approach. The patient in question presented clinical signs compatible with CAD and responded positively to the symptomatic treatment instituted. This factor reinforces the importance of awareness and engagement of the person responsible for the animal in the therapeutic process, especially in chronic diseases such as CAD. Long-term follow-up is essential to ensure the patient's quality of life and minimize recurrences of clinical signs.

REFERENCES

Alcantara, L. P. A., Salvarani, F. M., & João, C. F. (2022). Tratamentos de dermatite atópica canina: Revisão. Pubvet, 16(5), 188. https://scholar.archive.org/work/3vepqxzf6vehpmyfz3yn7unhii/access/wayback/http://www.pubvet.com.br/uploads/916e525eccd47e88468a277556a1e368.pdf

Barbosa, D. J. A., Almeida, C. M. Z., & Barros, L. M. C. (2024). Dermatite atópica canina: Desafios no diagnóstico e tratamentos. Revista de Trabalhos Acadêmicos – Centro Universo Juiz de Fora, 1(17). http://www.revista.universo.edu.br/index.php?journal=1JUIZDEFORA2&page=article&op=view&path%5B%5D=11757

Cavalcante, J. R. (2024). Abordagens terapêuticas da dermatite atópica canina: Revisão de literatura [Doctoral dissertation, Universidade Estadual do Maranhão]. https://downloads.editoracientifica.com.br/articles/240917669.pdf

Costa, R. D., & Alves, B. H. (2024). Terapêutica da dermatite atópica canina: Uma revisão de literatura. Revista Agroveterinária do Sul de Minas, 6(1), 71–86. https://www.periodicos.unis.edu.br/agrovetsulminas/article/view/887

Martins, A. S. (2017). Utilização clínica de oclacitinib no maneio da dermatite atópica canina: Avaliação da resposta ao tratamento na perspetiva dos tutores [Doctoral dissertation, Universidade de Lisboa, Faculdade de Medicina Veterinária]. https://www.repository.utl.pt/handle/10400.5/14332

Pacheco, B. D. (2017). Avaliação do maleato de oclacitinib manipulado e Apoquel® no controle da dermatite atópica em cães. https://pesquisa.bvsalud.org/portal/resource/pt/vtt-207759

Sanabri, R. A., Ribeiro, R. M., & Ribeiro, D. S. F. (2022). Dermatite atópica canina: Um olhar sobre os tratamentos atuais. Research, Society and Development, 11(11), e80111132807. https://rsdjournal.org/index.php/rsd/article/view/32807

Silva, J. B. B., Ribeiro, R. M., & Ribeiro, D. S. F. (2021). Alternativas mais recentes no tratamento da dermatite atópica canina. Anais do Colóquio Estadual de Pesquisa Multidisciplinar (ISSN 2527-2500) & Congresso Nacional de Pesquisa Multidisciplinar. http://publicacoes.unifimes.edu.br/index.php/coloquio/article/view/989

Solomon, S. E. B., Farias, M. R., & Pimpão, C. T. (2012). Dermatite atópica canina: Fisiopatologia e diagnóstico. Revista Acadêmica Ciência Animal, 10(1), 21–28. https://periodicos.pucpr.br/cienciaanimal/article/view/12068