

Topical Treatment of Canine Dermatitis

SUMMARY: A dog was suffering from dermatitis on his back paw, likely because of an insect bite and the subsequent licking and chewing. A compounded topical treatment including diphenhydramine 2% and naltrexone 0.2% in PCCA ZoSil® was applied for 5 days to the affected skin area. Following only 3 days of treatment with the ZoSil topical gel, the canine dermatitis was surprisingly almost 100% resolved.

Submitted by: Cristina Lunnen, PharmD, Dottie's Pharmacy, Charleston (SC), USA.

Introduction:

Dermatitis is a general term that refers to an inflammatory, pruritic skin condition. In canines, the itching can result in licking and biting to the affected areas, which compromises the normal barrier of the skin and worsens the skin condition. Dermatitis is one of the most common reasons for dog owners to visit their local veterinary clinic (Clark, 2017).

The purpose of this case study is to present a compounded topical treatment of canine dermatitis using an antihistamine and an opioid antagonist incorporated in PCCA ZoSil, a silicone hydrogel base designed to topically deliver active pharmaceutical ingredients (APIs) to animal skin through its Smart Diffusion Technology™ (PCCA, 2022).

Case Report:

Rutledge is a 4-year-old male dog with no underlying conditions (Figure 1) who presented dermatitis on his back right paw. According to the dog's owner, his paw was very swollen, red and tender, and he was continuously licking and chewing on it. It is suspected that an insect bit the paw of Rutledge.

The veterinary physician prescribed diphenhydramine 2% and naltrexone 0.2% in PCCA ZoSil (PCCA Formula 13902) (Table 1), and this was the only product used to treat the canine dermatitis. The ZoSil topical gel was dispensed in a 30 g jar and it was applied to the affected area two to three times per day, for a total duration of 5 days only.



Figure 1.
Photo of
Rutledge, a
4-year-old
male dog.

Rx

Diphenhydramine HCl USP	2%
Naltrexone HCl USP Anhydrous	0.5%
Purified Water, USP	5 mL
Base, PCCA ZoSil®	q.s. 100 g

Table 1. Formula for Diphenhydramine HCl 2% and Naltrexone HCl 0.5% Topical Gel (ZoSil) (Vet).

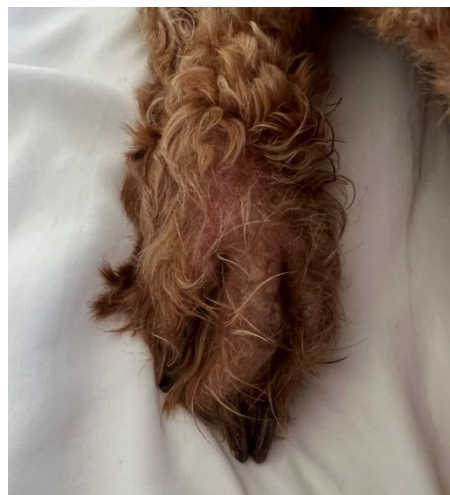
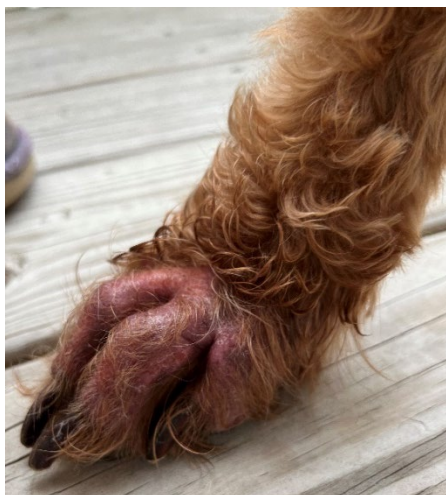
Diphenhydramine is an antihistaminic drug indicated in dermatitis to alleviate pruritus in order to allow the skin to heal appropriately. Naltrexone may also be used topically in dermatitis when treating veterinary patients. It has been shown to decrease the licking behavior by blocking the release of endogenous opioids and thus increase the perception of pain (Clark, 2017).

Topical compounded medications offer many advantages when compared to oral medications, including the ease of administration to veterinary patients and the versatility to incorporate multiple APIs with variable mechanisms of action. However, creams and gels are commonly greasy and sticky when topically applied, which is undesirable, but PCCA ZoSil overcomes these obstacles since it was developed considering the specificities of animal skin (PCCA, 2022).

Methodology:

The research instrument used in this case study to evaluate the efficacy of the ZoSil topical gel was the 'Questionnaire on the quality of life of dogs with skin disease and their owners.' It comprises 15 questions with 4 possible answers each: not at all, a little, quite a bit and very much (Noli *et al.*, 2011). The dog's owner was requested to complete the questionnaire retrospectively, with reference to the dog's skin condition prior to treatment, and also to share photographs of the affected area (Figures 2a and 2b).

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Figures 2a and 2b. Rutledge's back right paw before treatment (2a) and 5 days after treatment (2b) with the ZoSil topical gel.

Results and Discussion:

The dog and the owner were both negatively impacted by the canine dermatitis. According to the results of the before-treatment questionnaire, the skin condition was 'very much' severe and disturbing. There was 'quite a bit' of impact on the dog's behavior and/or mood, sleep, playing and social relationships. On the other hand, there was 'a little' impact on the dog's meals, usual habits and administration of therapies. With regards to the impact of the dog's disease on the quality of life of the owner, there was 'quite a bit' of impact on the time, expenditure and emotional distress. On the other hand, there was 'a little impact' on the owner's tiredness and family activities but 'no impact at all' on physical uneasiness/discomfort and family relationships.

Following 3 days of topical treatment, the dog's owner stated that the skin condition was almost 100% healed and that the dog had stopped licking and chewing on it even before the inflammation had decreased.

Having a beloved pet suffer from physical and/or emotional distress may undoubtedly impact the owner and the whole family at home. It is important to deal with veterinary disease promptly and effectively for the benefit of all. The use of the ZoSil topical gel quickly resolved the canine dermatitis and brought harmony at home once again.

Testimonial:

Worked very well! His paw was severely irritated and inflamed. After 3 days of applying the cream 2-3 times per day, it was almost 100% healed and he stopped gnawing at it. That was the most impressive part. This cream was a miracle!

Consent:

Informed consent was obtained from the dog's owner for publication of this case study. Permission to use the questionnaire for the purposes of this case study was requested of Dr. Chiara Noli and obtained.

References:

PCCA (2022) ZOSIL® (30-4963). Available at: <https://www.pccarx.com/products/PCCA-ZOSIL%C2%AE/30-4963/PROPRIETARYBASES> (Accessed on: August 15).

Noli, C., Minafò, G. and Galzerano, M. (2011) 'Quality of life of dogs with skin diseases and their owners. Part 1: development and validation of a questionnaire'. *Vet Dermatol*, 22 (4), p. 335-43.

Clark, D. (2017) 'Atopic Dermatitis in Veterinary Patients'. *PCCA Apothegram*, March 2017, p. 8-9.