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UNDERSTANDING VENENATA DERMATITIS AND ITS TOXIN: A CASE REPORT

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Abstract

Dermatitis venenata refers to a skin irritation reaction resulting from bites or direct contact between the skin and the saliva or hair of insects. This contact manifests as distinctive red patches on the skin, which may extend to surrounding areas and develop into painful blistering lesions. These lesions often exhibit a spreading pattern in areas of contact, commonly known as "kissing lesions." Without proper management, these blisters may lead to skin infections or leave lasting scars. Venenata dermatitis, linked to the Paederus genus toxin paederin, often occurs in warm, tropical regions. It presents with blistering, red skin, vesicular papules, and pustules in diverse patterns 8 to 24 hours after toxin exposure. Predominantly affected areas include the face, neck, shoulders, arms, and waist. "Kissing lesions" emerge when the initial lesion transfers to adjacent normal skin. Early detection is critical in enabling quick and appropriate medical interventions and establishing preventive measures, thus decreasing the likelihood of symptom aggravation. This prompt diagnostic process protects against symptoms and guarantees effective management, essential for overall skin health. In our case, a 27-year-old woman presented symptoms of redness, stinging, and itching around her neck area. Initially manifesting as redness, the condition progressed to blister-like formations within a few hours. The diagnosis of venenata dermatitis was established based on the patient's reported symptoms and objective findings from the dermatological examination. The physical examination revealed a well-defined erythema with vesicles and erosions localized on the right side of the neck.

Kata Kunci: *Venenata Dermatitis, Irritant Contact Dermatitis, Toxin, Kissing Lesions*

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INTRODUCTION

Dermatitis denotes an inflammatory skin condition affecting both the epidermis and dermis, triggered by internal and external factors, presenting a spectrum of clinical manifestations that include diverse eruptions (such as redness, swelling, papules, vesicles, scales, and lichenification), frequently accompanied by itchiness.1,2 It is classified into allergic contact dermatitis (ACD) and irritant contact dermatitis (ICD), with ICD further subdivided into acute and delayed acute variations. Venenata dermatitis stands as a delayed form of acute irritant contact dermatitis typically provoked by bites, saliva, or the aerial particles of insects.3,4

Acute irritant contact dermatitis caused by insect toxins typically emerges in warm, tropical areas, often associated with paederin as a prevalent culprit. Clinical features and symptoms become evident within 8 to 24 hours or more after exposure. Patients commonly experience discomfort the subsequent day, initially displaying redness that progresses to vesicles or in severe instances, necrosis by day's end.5,6 Outbreaks of paederus have been reported in numerous countries, encompassing areas in Africa, South America, Turkey, Iran, and Asia. Notably, a significant outbreak comprising 2,000 cases was reported in Okinawa. Additionally, 156 instances of dermatitis caused by paederus toxin were recorded among patients seeking treatment at dermatology clinics in northern Iran between May and October 2011.7

Delayed or incorrect diagnosis in cases of dermatitis venenata can have significant consequences due to continued exposure to the offending agent, thereby exacerbating skin inflammation. This situation often leads to intensified skin irritation and discomfort, affecting the patient's quality of life. Furthermore, the prolonged inflammatory response can compromise the skin's barrier function, significantly increasing the risk of secondary skin infections. Such infections not only compound the discomfort but can also necessitate more complex treatment regimens. Additionally, if the condition remains unaddressed or improperly managed, there is a heightened risk of dermatitis evolving into a chronic form. Chronic dermatitis presents a more significant therapeutic challenge, often requiring more intensive and prolonged treatment strategies. Among the secondary complications that may arise from this prolonged inflammation are lichenification, characterized by the thickening of the skin, and pigmentary changes, which can lead to cosmetic and functional skin issues. Thus, the ramifications of not promptly and accurately diagnosing dermatitis venenata are manifold, emphasizing the need for early and accurate detection and management. In our case, emphasizing the critical and time-sensitive diagnosing and pinpointing the root causes of dermatitis venenata is essential. Fast recognition of this condition aims to actively prevent the situation's potential worsening and allow for well-timed, specific interventions. It ensures the necessary treatment for preserving overall skin health and minimizes the risk of worsening dermatitis venenata symptoms.

CASE REPORT

A 27-year-old female patient presented herself at the dermatology and venereology outpatient department with a notable complaint of persistent discomfort, described as a burning and itching sensation localized specifically on the right side of her neck, persisting for the past three days. The onset of these distressing symptoms was reported immediately upon her return from work, following the removal of her jacket. The patient initially reported a sense of warmth in the right neck area, which then progressed into the emergence of a palpable and flat red patch. However, over the following days, this manifestation evolved into a more complex presentation characterized by an increasing sensation of burning, itching, and the development of palpable eruptions, subsequently expanding in size and area coverage. In the patient's account, it was significant to note the absence of any accessories or jewelry worn around the neck area. Moreover, the patient adamantly denied the application of any topical substances or products in the localized region.

Upon physical examination, a distinct and well-defined erythematous plaque, exhibiting clear demarcations, and displaying vesicles and erosions, was visibly identified in a localized manner on the right side of the neck. These observed cutaneous manifestations provided a detailed and specific account of the clinical presentation.

Figure 1. Kissing Lession at Right Side of the Neck

The treatment plan for the patient encompassed a prescription of clobetasol propionate 0.05%, an agent known for its potent anti-inflammatory properties aimed at lessening the ongoing inflammatory response. Complementing this, an antihistamine was administered to address and alleviate the pruritic sensations experienced by the patient. Additionally, a skin moisturizer was recommended to protect the skin barrier function and ameliorate dryness or potential irritation, thereby contributing to the overall management of the dermatological condition. Moreover, patient education was a pivotal component of the management strategy. The patient was instructed on the importance of averting exposure to chemical irritants, which could potentially exacerbate the existing skin condition. Simultaneously, the patient was counseled on the adverse effects of scratching, emphasizing the aggravation it may induce on the inflamed skin. Moreover, the patient received guidance on employing cold compresses as a measure to lessen the pruritus, providing relief from the associated discomfort and aiding in the mitigation of the inflammatory response. This comprehensive treatment approach was structured to not only address the existing symptoms but also to prevent further aggravation and promote the healing process.

DISCUSSION

Irritant Contact Dermatitis (ICD) represents a complex skin response to physical or chemical triggers, causing damage to the protective layer of the skin (stratum corneum). This damage includes alterations in keratin, reduction of lipids in the skin's upper layer, and modulation of skin moisture.8,9 Unlike allergic responses involving specific antigens, ICD doesn't engage antigen-antibody interactions but triggers innate response mechanisms that result in an inflammatory cascade, leading to various skin conditions. Among the types of ICD is Venenata Dermatitis, a form of delayed acute irritant contact dermatitis, often appearing from insect bites, saliva, or the minute hairs these insects release.10,11

Typically occurring 8 to 24 hours post-contact, this delayed form of irritant contact dermatitis manifests as an inflammatory skin reaction to the toxins these insects carry, mainly in tropical and warmer regions where insects like the Paederus, secreting paederin, are prevalent. These insects, roughly 7–13 mm long, possess an orange coloration, except for their distinctively black head, forewings, and tail-end. Despite their small size, these insects do not bite or sting, but their toxic secretion occurs upon direct or indirect skin contact, resulting in a range of skin lesions, from blisters to redness with vesicular papules and polymorphic patterns depending on toxin distribution.12,13

The reaction to toxin may occur about a day following skin contact, with the severity of the skin's response dependent on exposure duration, toxin concentration, and individual predispositions. In milder cases, the skin may show linear and temporary redness, whereas in severe cases, wider lesions may occur alongside systemic symptoms like fever, neuralgia, arthralgia, and vomiting. The areas most commonly affected by these skin lesions include the face, neck, shoulders, arms, and waist regions, sometimes exhibiting what's referred to as "kissing lesions" – paired skin lesions due to one lesion adhering to an adjacent unaffected skin area.14,15

Initial management usually includes washing with mild soap and water, cold compresses, followed by the application of corticosteroids and topical antibiotics if secondary infections are present. Preventative measures involve avoiding contact with affected individuals and employing means to keep insects away, such as blowing them off the skin or using a sheet of paper and cleansing the affected area. Considering that some insects are

attracted to bright light, sleeping in a dark environment might prevent contact with these insects.14,16 In the presented case of dermatitis venenata, the objective is improve clinical understanding and acknowledgment of its symptoms and management, demonstrating efficient diagnostic and treatment approaches to prevent the situation's potential worsening.

CONCLUSSION

The patient was diagnosed with venenata dermatitis, a type of delayed acute irritant contact dermatitis often caused by bites, saliva, or the airborne hairs of insects, most commonly encountered in hot and tropical regions. Clinically, it is characterized by blisters, red skin with vesicular papules, pustules, polymorphic forms, and multiple manifestations depending on the toxin's distribution, emerging 8 to 24 hours or more after contact. Commonly affected body areas include the face, neck, shoulders, arms, and waist regions. Kissing lesions may occur, which involve paired skin lesions resulting from one lesion adhering to adjacent normal skin. The importance of a timely diagnosis in cases of dermatitis venenata cannot be understated. This approach is pivotal in preventing the progression of symptoms and plays a key role in effective clinical management. Early diagnosis is essential in preventing exacerbations and guiding appropriate and specific medical interventions, which aligns with the primary goal of promoting overall skin health. By identifying the causes of dermatitis venenata early, healthcare providers can offer targeted treatments that are more likely to be effective. This proactive approach is crucial in addressing each patient's individual needs and sensitivities, ensuring that the treatment is practical and minimizes potential adverse reactions. Timely diagnosis of dermatitis venenata is a critical element in managing this condition. It goes beyond symptom management, preventive strategies, and targeted treatments. It is about ensuring effective condition management while also aiming to maintain and improve skin health on a broader scale.

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