

## Vesicant Dermatitis due to *Paederus Sp.*: Short Communication

Gustavo Moreira Amorim<sup>1,2\*</sup>, Leticia Dall'Oglio Whitaker<sup>1,3</sup>, Isadora Vicência Lúcio<sup>1,3</sup>, Bruna Molozzi<sup>2</sup>, Ingrid Reuwsaat Paul<sup>2</sup>, Roberto Moreira Amorim Filho<sup>2</sup>

<sup>1</sup>Faculty of Medicine, South Santa Catarina University

<sup>2</sup>Sector of Dermatology, Santa Teresa Hospital, Santa Catarina State Secretary for Health

<sup>3</sup>Family Health Strategy, Primary Care, Santa Catarina

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\*Corresponding author: Gustavo Moreira Amorim, MD, Msc, 135 Duarte Schutel street, downtown, Florianópolis, Santa Catarina, Brazil, Tel. No: +5548999827097; E-mail: gustavomoreiraamorim@hotmail.com

### Abstract

We present a very illustrative case of dermatitis caused by *Paederus sp* affecting a 3 year old healthy boy in the countryside of Brazil. The appearing of painful bullous lesions with clear content in a linear arrangement occurred suddenly, and was later diagnosed to be caused by the beetle popularly known in Brazil as "Potó" which predominate in rural areas. Treatment was realized only with local hygiene with antiseptics and dressing in the eroded areas, in addition to oral acetaminophen. The patient evolved with complete cure of the lesions. We also present a brief review of vesicant dermatitis by *Paederus sp*.

**Keywords:** Blister Beetle Dermatitis; Paederus Dermatitis; Irritant Contact Dermatitis.

### Dear Editor,

One of our doctors, recently graduated in medicine, during a voluntary mission in the countryside Bahia, Brazil, came across an interesting and illustrative case that we consider important to report. She attended a 3 year old boy at the rural family outpatient clinic, brought by his parents. The boy referred the appearance of painful skin lesions, noticed early in that morning. He was a healthy patient, without the use of continuous medications or previous allergies.

He presented a good general condition, without fever or any other systemic symptoms. On dermatological examination, multiple bullous lesions were identified, with clear content, in a linear arrangement, from the left lateral thoracic region to the right lumbar region. Some lesions on apparently healthy skin areas, while in the lumbar region there was a cluster of lesions on an erythematous base, with a central erosion area. Nikolsky sign was negative. (Figures 1, 2 and 3).

During a videoconference call with our team, it was possible to establish the presumptive diagnosis of vesicant dermatitis by *Paederus sp*. A local nurse with extensive experience in caring for patients in that location confirmed the occurrence of similar



**Figure 1:** Bullous lesions in a slightly linear arrangement on the left lateral thoracic region.



**Figure 2:** Multiple bullous lesions, some clustered on an erythematous base, with a central erosion area



**Figure 3:** A more detailed view of the lumbar plaque, with 2 bullous lesions on the extremities and 2 central eroded areas

cases in the region.

Patient was managed only with local hygiene with antiseptics and dressing in the eroded areas, in addition to oral acetaminophen. After 4 days, during reevaluation, major improvement was seen (Figure 4).

The first record of blisters caused by beetles dates from 1901 and is assigned to *Vordemanet al* [1]. Blister beetle dermatitis is a cutaneous condition caused by the toxins released by blister beetles. The disease is provoked by vesicating toxins present in the body fluids of these insects, causing an acute irritant contact dermatitis [1,2]. Vesicant toxins are found in the endolymph of *Paederus* beetles belonging to the class Insecta, order Coleoptera



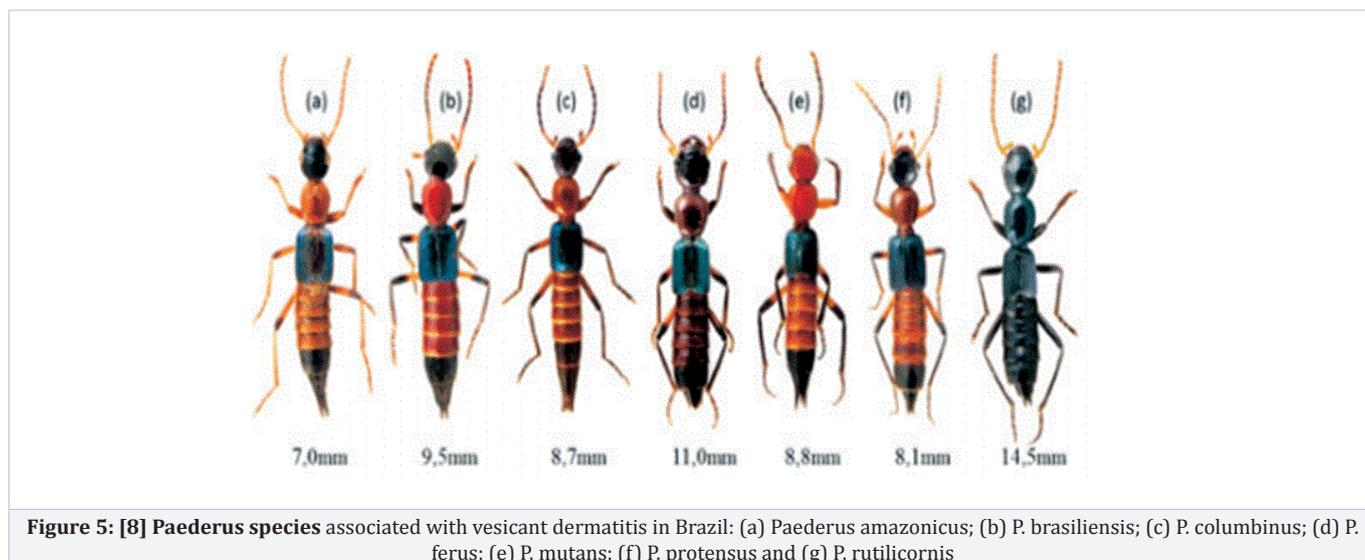
**Figure 4:** 4-day reevaluation, showing great improvement of the lesions and no sign of bacterial secondary infection.

(beetles), family Staphylinidae (rove beetles), subfamily Paederinae, tribe Paederini, subtribe Paederina [3,4]. About 600 species of the subtribe Paederina (*Paederus* and close allies) are known worldwide, predominating in tropical and temperate regions, and only 4% of them are potential causes of dermatitis. *Paederus* species are distributed throughout all continents except Antarctica [3-5]. In Brazil, the vesicant dermatitis is found mainly in the North, Northeast and Midwest regions, usually caused by *Paederus amazonicus*, *P. brasiliensis*, *P. columbinus*, *P. fuscipes* [6]. Although vesicant dermatitis caused by the beetle popularly known in Brazil as “Potó” predominate in rural areas, the disordered occupation of environments and synanthropy contributes to a significant increase of accidents involving arthropods in urban areas [5].

The accident with *Paederus sp.* occurs when the animal is crushed against the skin of exposed areas, releasing toxins (mainly Pederin) present in the hemolymph of the insect [7].

Symptoms typically begin between 24 and 48 hours, with the most common being itching and burning, and eventually progress to erythema, edema, vesiculation, pustules, crusts and exulcerations. Exposed areas of the body such as the face, neck, and arms are most affected [2,6,7]. The characteristic linear lesions are most commonly caused by the victim inadvertently crushing the beetle and reflexively brushing away the insect [2]. It is worth remembering, however, that the distribution can be bizarre. In fold areas, the “Kiss sign” may be present, in which a skin surface, juxtaposed to the other injured, reproduces the vesicant lesions by contact with toxins [7]. Most accidents are mild and less serious. But severe cases with more extensive skin involvement may have additional systemic symptoms such as fever, neuralgia, arthralgia, and vomiting [1,2].

Diagnosis can be made with clinical and epidemiological data [6]. Differential diagnosis should be made with herpes simplex, herpes zoster, contact dermatitis and phytophotodermatitis [7]. The primary treatment for vesicant dermatitis is the removal of the pederin toxin by washing with soap and water. This can be followed by application of cold wet compresses and topical steroids. Antibiotics should be reserved for cases with documented secondary infection, but not as a prophylactic measure. Oral corticosteroids are only indicated for severe cases with systemic evolution [1,2,5-7].



**Figure 5:** [8] *Paederus* species associated with vesicant dermatitis in Brazil: (a) *Paederus amazonicus*; (b) *P. brasiliensis*; (c) *P. columbinus*; (d) *P. ferus*; (e) *P. mutans*; (f) *P. protensus* and (g) *P. rutilicornis*

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