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Paederus Dermatitis – A Case Report

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Abstract

Paederus dermatitis is a skin irritation due to contact with certain rove beetle species, such as the Nairobi fly. It is also known as rove beetle rash, dermatitis linearis, spider lick, night burn, and Nairobi fly rash. We present a 40-year-old laborer with an erythematous plaque and blisters over his back, diagnosed as herpes zoster. He did not respond to conventional anti-herpetic treatment, and his lesions were spreading. There were no systemic symptoms. We revised our diagnosis to paederus dermatitis (PD). He was given topical antibiotics oral antihistaminics. He was symptomatically better, and his lesions slowly resolved after about three months.

Keywords: *Paederus dermatitis, back*

Introduction:

Paederus dermatitis is a skin irritation due to contact with certain rove beetle species, such as the Nairobi fly. It is also known as rove beetle rash, dermatitis linearis, spider lick, night burn, and Nairobi fly rash.

Rove beetles can be found in decaying vegetable and animal matter in most environments around the world, except Antarctica [4]. There are more than 1000 different species of rove beetle in New Zealand. They are more prevalent in warmer climates [5]. The beetle breeding period is during the rainy seasons [1,4].

Paederus dermatitis is due to contact with one of more than 600 *paederus* species of rove beetle, which have a blistering agent in their hemolymph (hemolymph is analogous to blood in vertebrates).

Outbreaks of paederus dermatitis are most commonly reported in Europe and Asia, but outbreaks have occurred in many other countries.

Paederus dermatitis is due to paederin, a toxin produced by pseudomonas bacteria in the hemolymph and released by the female paederus beetle [2, 4, 7]. Paederin causes a release of epidermal proteases and a loss of intercellular connection, inhibiting protein synthesis, DNA synthesis, and mitosis [2, 5].

Case History:

A 40-year-old laborer with an erythematous plaque and blisters over his back diagnosed as herpes zoster. He did not respond to conventional anti-herpetic treatment, and his lesions were spreading. There were no systemic symptoms. We revised our diagnosis to paederus dermatitis (PD). He was given topical antibiotics oral antihistaminics. He was symptomatically better, and his lesions slowly resolved after about three months.

Clinical Features:

A localized streaky or linear erythema appears 24–48 hours after contact with the beetle and is typically followed by vesicles and pustules after 2–4 days [2,4]. Signs take a week or more to disappear [2].

The cutaneous features of paederus dermatitis include:

- Erythema [1,4]
- Vesicles and pustules [4,]
- A burning sensation [1,4]
- 'Kissing lesions' where two adjacent flexural surfaces come together [1,4]
- Periocular dermatitis and kerato conjunctivitis ('Nairobi eye') [1,2,4,]
- Balanitis (inflammation of the glans of the penis) due to transfer of the toxin on hands [1,2].

Complications:

The primary complication of paederus dermatitis is the pain associated with the rash. Secondary complications include:

- Infection
- Exfoliation and ulceration (sometimes requiring hospitalization)
- Post-inflammatory hyperpigmentation
- Scarring [2,5].

Differential Diagnosis:

Paederus dermatitis may be confused with:

- Herpes simplex
- Herpes zoster
- Acute allergic contact dermatitis or irritant contact dermatitis
- Phyto photodermatitis
- Bullous impetigo
- Scald
- Chemical burn
- Cutaneous larva migrans
- Dermatitis herpetiformis
- Pemphigus foliaceus
- Caterpillar dermatitis

The distinguishing features of paederus dermatitis include [1]:

- Irritation confined to exposed areas
- Kissing lesions
- Occurrence during rainy/warm season
- Other individuals presenting with similar lesions

Treatment:

Once symptoms have appeared, the initial step should be to wash the affected area with soap and clean water to remove the pederin toxin.

After cleaning the area, apply a cold, wet compress and a topical steroid [1].

- A tincture of iodine can help neutralize the paederin toxin and act as an antiseptic [5].
- Soothing creams containing calamine, camphor, and a topical anesthetic can provide relief of pain and itching [5].
- Oral antibiotics (e.g., ciprofloxacin) for secondary bacterial infection [7].

Prevention:

Paederus dermatitis can be prevented by limiting the chance of exposure to the rove beetle.

- Use insect-proof netting at night.
- Select light sources that do not emit UV.
- Turn lights off when sleeping.
- Remove any beetle found on the skin without crushing it.
- Wash skin in contact with a rove beetle with soap and water [4,5,7].

Outcome:

It can take a few weeks for paederus dermatitis to resolve, and post inflammatory pigmentation may persist for several months [1,2].

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