

# Linear Dermatitis Following Contact With the Rove Beetle In Nigerians: A Report of 2 Cases

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## Citation

O Oyedeji, O Adebami, G Oyedeji. *Linear Dermatitis Following Contact With the Rove Beetle In Nigerians: A Report of 2 Cases*. The Internet Journal of Tropical Medicine. 2005 Volume 3 Number 1.

## Abstract

Cutaneous reactions to insects are common in the tropics. They usually follow arthropod bites and are referred to as papular urticaria. Dermatological reactions following contact with only insect or insect fluid content, in the absence of bites are rare. We report the case of a secondary school pupil and a farmer with linear dermatitis following contact with the rove beetle and its body fluid. To our knowledge this is the first reported case, of this disease in Nigeria.

## CASE REPORTS

### CASE 1

A 12-year-old male student of a boarding secondary school in Osogbo, Western Nigeria, presented at the school clinic with a linear facial rash. The rash was noticed on the morning after killing an insect that landed on his face the preceding night. He killed the insect by smacking it against the skin of his face. On waking the next morning, a swollen linear erythematous rash had developed on the face along the plane of contact with the insect. There were no associated painful sensations and the lesion was recognised as “skirt and blouse” by the colleagues of the affected pupil. Oral Ampiclox and twice daily toilet soap baths were thereafter commenced at the school clinic by the attending nurse. The swelling and redness evolved into a linear hyperpigmented patch with wrinkling of the affected skin areas over the next 72 hours. Finally the lesion healed with exfoliation of the wrinkled area to leave a smooth hyperpigmented linear lesion by the fifth day.

### CASE 2

A 47-year-old male farmer assisting with the nursing care of his daughter on hospital admission was noticed to have a linear facial rash by the attending doctor to the daughter. He was otherwise well until the preceding night when he killed an insect, which alighted on his face by smacking. On waking he was noticed to have a linear erythematous facial rash, which was swollen and associated with itchy and peppery sensations. The diagnosis was made at that point as “skirt and blouse” by the farmer who identified the insect and was conversant with this insect reaction. Treatment of

the affected skin area was washing of the affected area with toilet soap and clean water and this was self-instituted on a once daily basis. By 48 hours there was resolution of the swelling, erythema and peppery, itchy sensation, leaving a wrinkled rash, which eventually exfoliated. The lesion finally healed leaving a smooth linear hyperpigmented linear lesion a week after noticing the rash.

### Figure 1

Figure 1: A picture of the pupil presented in the first case with the linear dermatitis.



**Figure 2**

Figure 2: The insect causing the linear dermatitis belonging to the genus *paederus*



**DISCUSSION**

The insect causing this lesion is the rove beetle, which belongs to the genus *paederus* in the family Staphylinidae <sup>1</sup>. There are over 200 species of the rove beetles and the specie implicated in the cases studied is yet to be identified [Fig 2]. These beetles are actually rove beetles and not blister beetles although, they can induce blister like lesions on the skin. <sup>2</sup> They occur in Africa, Asia, and South America. Previous reports on similar skin reactions to insects are rare and have not been documented among Nigerian. <sup>1,2,3,4</sup> The mechanisms that lead to these skin reactions are not fully understood. It would appear that some content of the insect body fluid released by the slap of the insect to the skin of the patient evoked the inflammatory response observed. It is most likely that the chemical constituents from this insect are capable of inducing skin inflammation with eventual necrosis of the affected areas. The causative insect in the reported cases is nocturnal in habit thus explaining the timing of the bites.

In Egypt members of the rove beetle (genus *Paederus*) have been found to contain pederin, which is a potent toxin capable of causing a necrotizing lesion (dermatitis linearis) and conjunctivitis when left in contact with the human skin and eye respectively. <sup>1</sup> There are no associated cases of conjunctivitis; this may be due to the toxin not coming in contact with the eye from hand contamination. <sup>3</sup>

Contact with insects may induce cutaneous or systemic reactions, ranging from mild, to annoying or life threatening reactions. <sup>4</sup> Cutaneous reactions to insects' bites such as papular urticaria are not uncommon among the inhabitants of the tropics especially the school age group. <sup>5</sup> Unlike most cases of skin reactions associated with insects, the reactions in these case reports were not secondary to bites. The diagnosis of skin lesions following contact with insects thus,

requires a high index of suspicion, and familiarity with the insect fauna of the area in which one's patient lives and visits. <sup>6</sup> In the two cases presented, the lesions were identified by the non-medical populace, who refer to it locally as "skirt and blouse". Physicians who are unfamiliar with this skin reaction may however mistake these lesions for burns or cutaneous herpetic zoster infections or even healed scars arising from child abuse.

The management of this lesion consist of antihistamines to soothe the itchy and burning sensation experienced. The lesion should also be washed twice daily with toilet soap and mild antiseptics to prevent secondary infections. In cases where secondary bacterial infection is established an appropriate antibiotic is indicated. Prevention of this lesion is based on use of effective insecticides and repellent, this will ensure avoidance of contact with offending insect. <sup>7</sup>

Rove beetles are harmless insects when in contact with the human body, if left unharmed. Thus, it is wise for to obey the biblical commandment not to kill. Further studies need to be carried out to determine the insect specie, the chemicals and toxins found in this insect.

**ACKNOWLEDGMENT**

We wish to thank the following people for their contribution; Prof. E.A Akingbounge of the department of Plant Science, Obafemi Awolowo University, Ile-Ife, Mr. Gbenga Dedeke of the Zoology department, Olabisi Onabanjo University, Ago Iwoye, Drs. Afolabi, Ojerinde, Fakokude and Aworinde of the department of paediatrics, Ladoke Akintola University of Technology Teaching Hospital, Osogbo. Finally, we appreciate the co-operation of our patients.

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Date last updated: June 4, 2003, Date assessed: November 9, 2005.

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