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CASE REPORT

# Severe Large Local Allergic Reaction Following Ant Bite in a Young Female: A Case Report

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**ABSTRACT**

A 27-year-old female presented with an acute exaggerated local allergic reaction following an ant bite on the left hand, localized initially between the third and fourth interdigital spaces on the dorsum. Within a few hours, she developed progressive swelling involving the entire hand, associated with erythema, warmth, tenderness, and intense pruritus. She had a known history of hypersensitivity to ant bites without previous systemic or anaphylactic manifestations. Clinical examination revealed diffuse edema and localized inflammatory signs without systemic involvement. The patient was treated with oral fexofenadine, hydroxyzine, a short course of systemic corticosteroids, and adjunctive anti-edematous therapy. Significant clinical improvement was observed within 72 hours, with complete resolution by day seven. This report highlights the importance of early recognition and appropriate pharmacological management of large local allergic reactions to insect bites to prevent functional impairment and secondary complications.

**Keywords:** Ant bite allergy, Large local reaction, Antihistamines, Corticosteroids, Hypersensitivity

## INTRODUCTION

Ant bites commonly produce localized inflammatory reactions; however, in sensitized individuals, they may result in exaggerated local allergic responses characterized by extensive swelling, erythema, warmth, and severe pruritus[1]. These reactions are mediated primarily through venom-induced mast-cell activation and IgE-dependent hypersensitivity mechanisms[2]. Although often self-limiting, large local reactions may cause significant discomfort, functional limitation, and may clinically mimic cellulitis, leading to diagnostic uncertainty[3].

Ant venom contains alkaloids and protein components capable of triggering histamine release and vascular permeability, resulting in edema and inflammation[4]. Early pharmacological intervention is therefore essential to reduce symptom severity and prevent progression[5]. Non-sedating

H1 antihistamines are considered first-line therapy, while sedating antihistamines may be used as adjuncts in cases of severe pruritus[6]. Systemic corticosteroids are recommended when swelling is extensive or interferes with normal limb function[7]. Reporting such cases contributes to improved understanding of the clinical spectrum and rational management of exaggerated insect-bite reactions[10].

## CASE REPORT

A 27-year-old female presented with acute swelling and redness of the left hand following an ant bite sustained between the third and fourth interdigital spaces. She reported rapid progression of swelling extending to the entire hand, accompanied by severe itching, warmth, and tenderness. There was a known history of hypersensitivity to ant bites, though no previous episodes of systemic allergic reactions or anaphylaxis were reported.

On examination, the left hand showed diffuse edema and marked erythema with increased local temperature. There was no lymphangitic streaking, fever, respiratory distress, wheezing, or hypotension. Systemic examination was unremarkable, and the patient was not on any regular medications.

Based on clinical presentation, a diagnosis of large local allergic reaction to ant bite was made. She was managed on an outpatient basis with oral fexofenadine 120 mg once daily, hydroxyzine 25 mg twice daily for symptomatic relief of pruritus, prednisolone 20 mg once daily for short-term control of inflammation, and trypsin–chymotrypsin twice daily as adjunctive anti-edematous therapy. Treatment was continued for seven days.

The patient demonstrated significant improvement within 48–72 hours, with marked reduction in swelling, erythema, and itching. Complete resolution was observed by day seven without residual functional impairment.

## DISCUSSION

Large local reactions to insect bites represent an exaggerated IgE-mediated hypersensitivity response, typically extending beyond the immediate bite site but remaining confined to the affected region[8, 9]. In the present case, involvement of the entire hand without systemic features is consistent with a large local reaction rather than anaphylaxis or cellulitis.

Non-sedating antihistamines such as fexofenadine are effective in reducing histamine-mediated symptoms including pruritus and erythema. Sedating antihistamines like hydroxyzine may be used concurrently in severe pruritus to enhance symptomatic relief and improve patient comfort, particularly during the acute phase[6]. Systemic corticosteroids are indicated in extensive reactions causing significant edema or functional limitation, as they reduce inflammatory mediator release and vascular permeability[7].

Trypsin–chymotrypsin has been used as supportive therapy for reducing tissue edema through proteolytic anti-inflammatory effects. Early and appropriate treatment is crucial, as untreated large local reactions may be mistaken for cellulitis, potentially leading to unnecessary antibiotic use. This case demonstrates successful resolution with conservative outpatient management.

## CONCLUSION

This case highlights the importance of recognizing large local allergic reactions following ant bites and differentiating them from infectious or systemic allergic conditions. Early initiation of antihistamines and short-course corticosteroids leads to rapid symptom resolution and prevents functional impairment. Patient education regarding early symptom recognition and prompt treatment is particularly important in individuals with known hypersensitivity.

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