

Acute Generalized Exanthematous Pustulosis after Ingestion of Lacquer Chicken

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Acute generalized exanthematous pustulosis (AGEP) is an acute pustular eruption characterized by multiple small, sterile, non-follicular pustules on an erythematous and edematous base, usually accompanied by fever and neutrophilia. It is attributed to systemic drugs in over 90% of cases, mainly β -lactam and macrolide antimicrobials. Viral infections, mercury exposure, *Ginkgo biloba*, and spider bites may occasionally cause the condition. We report a rare case of AGEP induced by intake of lacquer chicken in a 40-year-old man. (Ann Dermatol (Seoul) 20(4) 209~211, 2008)

Key Words: Acute generalized exanthematous pustulosis, Lacquer chicken

INTRODUCTION

In 1980, Beylot et al¹ first described acute generalized exanthematous pustulosis (AGEP) as an acute pustular eruption on an erythematous bed, accompanied by fever and neutrophilia. A wide range of systemic drugs have been suspected of causing these reactions in more than 90% of cases². Rarely, intake of lacquer chicken can be a cause of AGEP, and Park et al³ reported four such cases. We present a case of AGEP induced by ingestion of lacquer chicken, which contains a known allergen, urushiol.

CASE REPORT

A 40-year-old man was admitted to our department with a pruritic rash of four days duration. Six days before, he had ingested lacquer chicken as a health food. Physical examination demonstrated

marked generalized, symmetrical erythema with multiple overlying small pustules on the trunk, medial arms, and proximal legs (Fig. 1). The patient also had a fever and complained of severe itching and burning. He had ingested lacquer chicken a couple of times in the past, but this was the first time he had developed a skin eruption. He reported no history of psoriasis, drug ingestion, recent infection, or contact with mercury.

Laboratory studies showed leucocytosis ($17.3 \times 10^9/L$) with neutrophilia and hypocalcaemia (7.9 mg/dl). The ESR and CRP were elevated (23 mm/h and 5.22 mg/dl). A skin biopsy specimen taken from a pustular lesion on the thigh revealed intracorneal pustules with neutrophils. The papillary dermis was edematous, and a superficial perivascular lymphocytic infiltrate with scattered interstitial neutrophils and eosinophils was noted (Fig. 2). On the basis of clinical, histopathological, and laboratory findings, a diagnosis of AGEP was made.

The patient was treated with systemic corticosteroids and antihistamines, along with topical corticosteroids. The pustules rapidly resolved over three days with desquamation, and the generalized erythema completely resolved within ten days.

DISCUSSION

AGEP is an acute pustular eruption characterized

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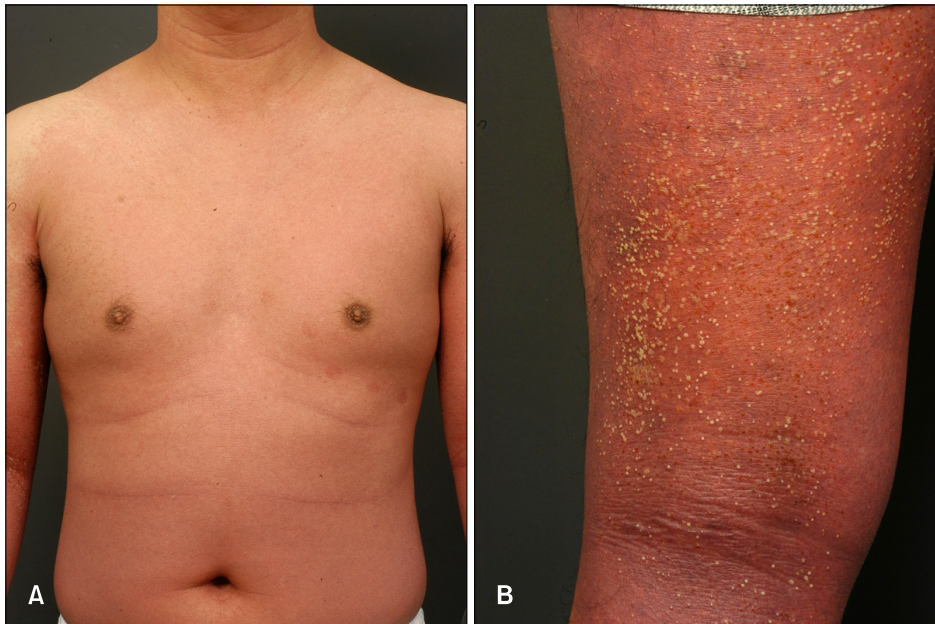


Fig. 1. (A) Generalized, symmetrical erythema with overlying pustules on the trunk. (B) Numerous small pustules were more clearly visualized on the posterior thigh.

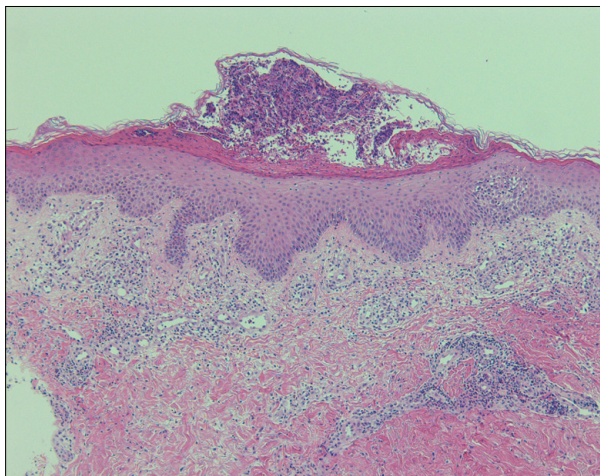


Fig. 2. A skin biopsy showed an intracorneal pustule with neutrophils and spongiosis. A mixed interstitial and perivascular infiltrate of neutrophils, lymphocytes, and eosinophils was present in the dermis (H&E, $\times 200$).

by numerous, non-follicular pustules arising on a widespread erythematous base, which usually appears first in the intertriginous areas and then spreads to other body sites. Neutrophilia and high fever are also usually present. The pustules resolve spontaneously within a few days and are followed by pinpoint desquamation. Histologically, AGEP is characterized by spongiform intraepidermal or sub-

corneal pustules, dermal edema, vasculitis, perivascular neutrophils or eosinophils, and necrotic keratinocytes².

AGEP is induced by systemic drugs in over 90% of cases, mainly β -lactam and macrolide antimicrobials. Calcium channel blockers, anti-malarials, and terbinafine have also been reported to cause AGEP^{2,4}. In addition, viral infections, mercury exposure, *Ginkgo biloba*, and spider bites may serve as occasional causes⁵⁻⁸.

Lacquer chicken contains a known contact allergen, urushiol, the active component of which is pentadecylcatechol (PDC). When a previously sensitized person ingests the food, urushiol can reach the skin through the circulation and can cause systemic contact dermatitis. Common skin manifestations include maculopapular eruption, erythema multiforme, and erythroderma. Purpura, wheals, and blisters have occasionally been reported⁹. AGEP very rarely occurs secondary to ingestion of lacquer chicken. To date, four cases have been reported by Park et al³. All the patients in their report developed AGEP within one to four days after ingestion of lacquer chicken, and with or without treatment, all the eruptions resolved within ten days.

The mechanism responsible for the induction of AGEP after lacquer chicken ingestion is unknown. Girardi et al¹⁰ demonstrated drug-specific positive

patch test responses and in vitro lymphocyte proliferative responses in patients with a history of AGEPE, a finding that strongly suggests that AGEPE occurs via an antigen-specific T-cell-mediated process. Similar mechanisms may have triggered the appearance of AGEPE in our patient. Although we did not challenge him with a patch test, it is possible that ingestion of lacquer chicken induced AGEPE in our patient because there is a causal relationship between intake of the food and the skin eruption. There were no other possible causes in our patient.

AGEPE should be differentiated from other pustular dermatoses, such as generalized pustular psoriasis and subcorneal pustular dermatosis. Pustular psoriasis also demonstrates similar pustules, but it is usually associated with papillomatosis and acanthosis. Clinically, most patients with pustular psoriasis have a past history of psoriasis and show more generalized, longer lasting eruptions than those with AGEPE². Subcorneal pustular dermatosis tends to affect mainly intertriginous areas, and each lesion spreads peripherally and leaves a central polycyclic area. Histologically, spongiosis and leukocytoclastic vasculitis are less commonly seen in subcorneal pustular dermatosis¹¹.

The most important aspect of AGEPE treatment is the immediate withdrawal of the causative agent. Because of the self-limited nature of AGEPE, other specific treatments are not usually needed, but topical or systemic corticosteroids can be helpful².

To our knowledge, lacquer chicken-induced AGEPE is a rare entity. Our case adds lacquer chicken to the list of etiologies for AGEPE and reinforces the idea that lacquer chicken should be avoided because of its severe cutaneous and systemic effects.

REFERENCES

1. Beylot C, Bioulac P, Doutre MS. Acute generalized exanthematous pustulosis (four cases). *Ann Dermatol Venereol* 1980;107:37-48.
2. Sidoroff A, Halevy S, Bavinck JN, Vaillant L, Roujeau JC. Acute generalized exanthematous pustulosis (AGEPE)--a clinical reaction pattern. *J Cutan Pathol* 2001;28:113-119.
3. Park YM, Park JG, Kang H, Houh D, Byun DG, Kim JW. Acute generalized exanthematous pustulosis induced by ingestion of lacquer chicken. *Br J Dermatol* 2000;143:230-232.
4. Beltraminelli HS, Lerch M, Arnold A, Bircher AJ, Haeusermann P. Acute generalized exanthematous pustulosis induced by the antifungal terbinafine: case report and review of the literature. *Br J Dermatol* 2005;152:780-783.
5. Ofuji S, Yamamoto O. Acute generalized exanthematous pustulosis associated with a human parvovirus B19 infection. *J Dermatol* 2007;34:121-123.
6. Roujeau JC, Bioulac-Sage P, Bourseau C, Guillaume JC, Bernard P, Lok C, et al. Acute generalized exanthematous pustulosis. Analysis of 63 cases. *Arch Dermatol* 1991;127:1333-1338.
7. Pennisi RS. Acute generalised exanthematous pustulosis induced by the herbal remedy Ginkgo biloba. *Med J Aust* 2006;184:583-584.
8. Davidovici BB, Pavel D, Cagnano E, Rozenman D, Halevy S. Acute generalized exanthematous pustulosis following a spider bite: report of 3 cases. *J Am Acad Dermatol* 2006;55:525-529.
9. Park SD, Lee SW, Chun JH, Cha SH. Clinical features of 31 patients with systemic contact dermatitis due to the ingestion of Rhus (lacquer). *Br J Dermatol* 2000;142:937-942.
10. Girardi M, Duncan KO, Tigelaar RE, Imaeda S, Watsky KL, McNiff JM. Cross-comparison of patch test and lymphocyte proliferation responses in patients with a history of acute generalized exanthematous pustulosis. *Am J Dermatopathol* 2005;27:343-346.
11. Sanchez NP, Perry HO, Muller SA, Winkelmann RK. Subcorneal pustular dermatosis and pustular psoriasis. A clinicopathologic correlation. *Arch Dermatol* 1983;119:715-721.