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Erythema Annulare Centrifugum-like Neutrophilic Dermatitis: Effects of Potassium Iodide

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Figurate erythema can be seen in various dermatological backgrounds, including erythema annulare centrifugum (EAC) and collagen diseases. Neutrophilic dermatoses clinically demonstrating figurate erythema, however, are relatively rare. We describe here a case of a 76-year-old Japanese man who presented with figurate erythema histologically characterized by neutrophilic infiltration, which was treated successfully with potassium iodide.

CASE REPORT

A 76-year-old man presented to our outpatient clinic with a one-year history of recurrent annular erythematous lesions. The eruptions had usually disappeared spontaneously within 2–4 weeks, with new lesions occurring after a few months.

On physical examination, annular oedematous erythemas were found spread over the extremities, back and gluteal regions (Fig. 1a). Some of the lesions were more than 10 cm in diameter. The lesions had elevated borders and central resolution. Scaling, vesicles and crusts were absent. The patient reported slight itching. His general condition was good, and he had not been taking any medications. The initial diagnosis was EAC, and differential diagnoses were erythema gyratum repens and Sjögren's syndrome.

Laboratory data showed slightly elevated C-reactive protein (0.48 mg/dl) and immunoglobulin E (658 IU/l). Anti-nuclear antibody was positive at a titre of 1:80, although anti-Sjögren's syndrome A (SS-A) and B (SS-B) antibodies were negative. Otherwise, the results were normal, including blood cell count, rheumatoid factor, tumour markers and serum complement. Whole-body computed tomography (CT) scanning showed only fatty liver and gallbladder stones.

Histological examination of a skin biopsy taken from the active border of an annular lesion on the left thigh showed perivascular and interstitial cell infiltration without remarkable epidermal changes. The dermal infiltrate consisted mostly of neutrophils in association with small numbers of eosinophils and rare lymphocytes (Fig. 2). Vasculitis was not detected. The case was finally diagnosed as neutrophilic figurate erythema.

Initial treatments with oral anti-histamine and topical steroid were unsuccessful. Based on the diagnosis of neutrophilic

dermatitis, oral potassium iodide at 0.9 g/day was started, and the lesions disappeared completely within 2 weeks (Fig. 1b). The eruptions have been almost completely suppressed for 2 months under the potassium iodide treatment.

DISCUSSION

The eruptions had the characteristic annular figurate pattern. Figurate erythema is typically seen in EAC, erythema gyratum repens, Sjögren's syndrome and certain other disorders. However, our case showed typical histological features of neutrophilic dermatitis. A search of the English literature found only two cases described as "neutrophilic figurate erythema" in adults (1, 2): one with Hodgkin's lymphoma showed a paraneoplastic clinical course, and the other had no associated diseases or laboratory abnormalities. In children, we found three cases described as "neutrophilic figurate erythema of infancy", characterized by annular and arciform lesions with centrifugal growth and central clearing, without associated diseases and significant laboratory abnormalities (3–5).

From the viewpoint of neutrophilic dermatoses, Christensen et al. (6) described two cases of patients with chronic and recurrent outbreaks of generalized annular erythematous, oedematous cutaneous plaques, with histopathological findings suggestive of Sweet's syndrome, but without fever or general symptoms. They used the term "chronic recurrent neutrophilic dermatitis", and Cabanillas et al. (7) also reported a case of this entity. Clinicopathologically, our case can also be included in this entity, although most of the annular eruptions seen in neutrophilic dermatoses were not as large as those in our case. Our case suggests that neutrophilic dermatoses can rarely show large annular figurate erythema mimicking EAC.



Fig. 1. (a) Annular erythematous plaques with central clearing on the back. (b) Healing after one month of potassium iodide treatment.

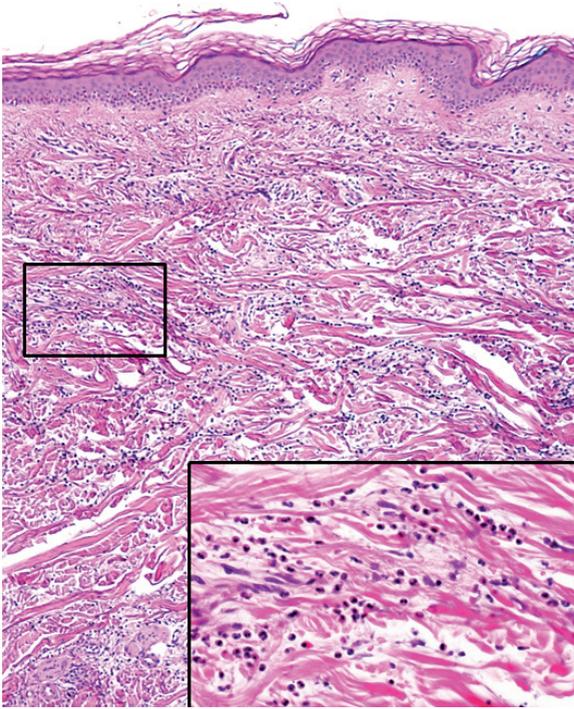


Fig. 2. Superficial and deep perivascular and interstitial dermatitis without epidermal changes (haematoxylin & eosin (H&E) $\times 40$). Inset: the perivascular and interstitial infiltrate consists mostly of neutrophils (H&E $\times 200$).

Treatment of neutrophilic figurate erythema includes oral prednisolone (1, 6, 7), colchicine (2), antihistamines (2, 4) and topical therapy (mild corticosteroid

cream, miconazole nitrate ointment, etc.) (4, 5), although one paediatric patient presented a complete resolution with no drug treatment (3). Potassium iodide, which inhibits neutrophil chemotaxis, often has clinical benefit for neutrophilic dermatoses, and our case also showed a prompt and favourable response. We report here the first case of potassium iodide treatment for neutrophilic figurate erythema showing annulare centrifugum-like lesions.

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