Acrosyringeal Involvement of Palmoplantar Lesions of Eosinophilic Pustular Folliculitis

Takahiro Satoh[1], Hiroshi Ikeda[2] and Hiroo Yokozeki[1]

[1]Department of Dermatology, Graduate School, Tokyo Medical and Dental University, 1-5-45 Yushima, Bunyko-ku, Tokyo 113-8519 and [2]Kameda Medical Center, Kamogawa, Japan. E-mail: tasa-1688.derm@tmd.ac.jp

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Eosinophilic pustular folliculitis (EPF) is an inflammatory disease characterized by pruritic follicular papulopustules of unknown aetiology. Histopathologically, a number of eosinophils infiltrate around and into hair follicles. Nevertheless, EPF uncommonly affects the palms and soles, which lack the hair follicle apparatus (1).

CASE REPORT

A 21-year-old Japanese man presented with a 6-month history of pruritic papular eruptions. Physical examination revealed a number of aggregated papules forming erythematous plaques on his trunk and extremities. In addition, his palms and soles showed pustules with diffuse scaly erythema. The blood eosinophil count was increased to 831/μl (normal: 70–450/μl). A biopsy specimen from the trunk showed a dermal cellular infiltrate, composed mainly of eosinophils and lymphocytes. Eosinophils infiltrated the hair follicle epithelium and sebaceous glands. Histopathology of pustules from palmar lesions showed intra-epidermal vesicular formations containing numerous eosinophils, together with dermal perivascular infiltrates consisting of lymphocytes and eosinophils (Fig. 1A). The patient was treated with systemic indomethacin farnesil (400 mg/day), resulting in a significant improvement in skin symptoms. Since it was noted that the pustules of the palms were microscopically located over the dermal eccrine ducts, and a part of the acrosyringium was found in the epidermal pustules (Fig. 1B), the anatomical correlation between the epidermal pustules and the eccrine glands was further examined by immunohistochemical staining with dermcidin (mouse anti-human dermcidin antibody, Santa Cruz Biotechnology Inc., Santa Cruz, California, USA). Intriguingly, dermcidin was detected not only in the dermal and epidermal eccrine structures, but also in the fluid of the epidermal pustules (Fig. 1C, D).

DISCUSSION

Although EPF is principally characterized by eosinophilic peri-follicular/intra-follicular inflammation, it occasionally affects the palms and soles, mimicking the clinical features of palmoplantar pustulosis (1). It was intriguing that, in the present case, pustules from the palms contained dermcidin, an anti-microbial peptide specifically secreted by the eccrine apparatus (2). This suggested that the eosinophilic pustules on the palms and soles in the EPF were anatomically correlated with the eccrine apparatus. Similar findings have been demonstrated in neutrophilic pustules of palmoplantar pustulosis (3). Although eosinophilic infiltration to the dermal eccrine ducts and glands was not seen, intra-epidermal eccrine ducts may be the sites predominantly affected by the palmoplantar lesions of EPF.

The authors declare no conflicts of interest.

REFERENCES

1. Aoyama H, Tagami H. Eosinophilic pustular folliculitis starting initially only with palmoplantar pustular lesions. Report of a case and review of the literature. Dermatology 1992; 185: 276–280.
2. Schittek B, Hipfel R, Sauer B, Bauer J, Kalbacher H, Stevanovic S, et al. Dermcidin: a novel human antibiotic peptide secreted by sweat glands. Nat Immunol 2001; 2: 1133–1137.
3. Murakami M, Ohtake T, Horibe Y, Ishida-Yamamoto A, Morhenn VB, Gallo RL, et al. Acrosyringium is the main site of the vesicle/pustule formation in palmoplantar pustulosis. J Invest Dermatol 2010; 130: 2010–2016.

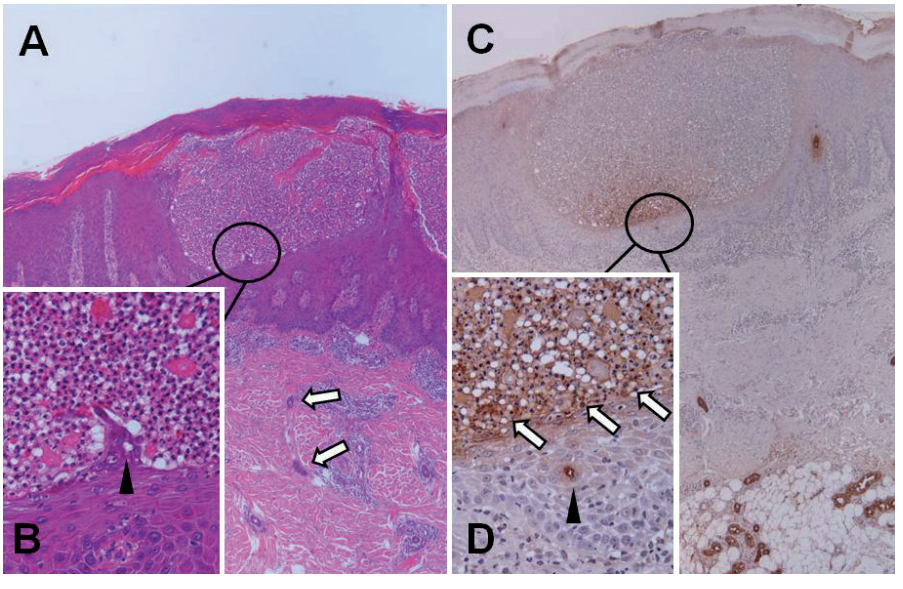

Fig. 1. Histopathological features of pustules from the palm. (A) Intra-epidermal eosinophilic pustular formation (*arrows*: dermal eccrine ducts) (haematoxylin and eosin (H&E) ×40). (B) Acrosyringeal structures protrude into the pustules (*arrowheads*) (H&E, ×400). (C) Immunohistochemical staining for dermcidin (×40, diaminobenzidine). (D) Dermcidin is detected at the bottom of the fluid (*arrow*) and acrosyringium (*arrowheads*) (×400, diaminobenzidine).