Papulopustular eruptions of bilateral soles with facial erythematous papuloplaques in a 44-year-old female

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Case report

A 44-year-old female suffered from chronic recurrent papules, vesicles and pustules on bilateral soles and heels for more than 1 year. It was associated with painful and itchy sensation. She had been treated as having pompholyx at a local hospital. The lesions improved partially but soon flared up after discontinuing the treatment. This time, she suffered from erythematous papuloplaques on bilateral cheeks and forehead with itchy sensation and mild tenderness for 4 months (Figure 1). Laboratory examination revealed eosinophilia (absolute eosinophil count: 1.310×10⁹/L; normal range: 0.050–0.350×10⁹/L). Immunoglobulin E level and antinuclear antibody were both within normal range and no parasite was found on stool examination. After the patient gave informed consent, she received biopsy at both facial and sole lesions. The facial lesion showed many eosinophils infiltrating to the pilosebaceous units in the dermis. Heavy mononuclear cell and eosinophil infiltration in the dermis were also noted (Figures 2A and 2B). The sole lesion showed mild parakeratosis, marked acanthosis, exocytosis, many epidermal pustules (subcorneal or intraepidermal), and mononuclear cells with neutrophils and eosinophils in the dermis. Some eosinophils were also found in epidermal pustules (Figures 3A and 3B).
Diagnosis

Eosinophilic pustular folliculitis.

Discussion

Eosinophilic pustular folliculitis (EPF) was first described by Ofuji et al\(^1\) in 1970. The typical clinical presentation (classic EPF) is recurrent pruritic erythematous papulopustular follicular eruption superimposed on plaques with central clearing. In a recent study\(^2\) of Asian patients with EPF, the male-to-female ratio approximates 1:1.1; the peak age of occurrence is the fourth decade of life. The distribution of EPF includes the face (97%), trunk (32%), extremities (21%) and palms and soles (21%)\(^3\) despite the fact that there is no follicle on either palms or soles. Aoyama and Tagami\(^3\) reported that in the Japanese literature, 18% of EPF patients exhibited pustules on the sole and palm, of whom the skin lesions began on the palms, soles, or both in 8% (18 males and 3 females). In our case, vesicles and pustules on bilateral soles were initially noted before the appearance of facial rash. Pathologic impression was pustular psoriasis rather than eosinophilic pustular folliculitis due to the predominant infiltration of neutrophils within epidermal pustules. After biopsy, however, the pustules on bilateral soles improved dramatically under indomethacin treatment. When reviewing the pathologic findings of this specimen, many eosinophils in the dermis and scattered eosinophils in the epidermal pustules were also noted. We believe that these pustular eruptions on bilateral soles were truly an early manifestation of eosinophilic pustular folliculitis. Saruta and Nakamizo\(^4\) reported some clinical characteristics of EPF lesions that differentiate them from cutaneous palmoplantar pustulosis (PPP). EPF lesions are larger than PPP lesions, and they tend to merge and display irregular margins. The surfaces of EPF lesions are erosive; the pustules tend to be elevated and tend to invade interdigital areas. The pathologic finding of EPF shows multilocular subcorneal and intraepidermal pustules containing numerous eosinophils and neutrophils rather than monolocular neutrophilic pustules indicative of PPP.\(^4,5\) In our case, the clinical picture of sole lesion is quite compatible with the description by Saruta and Nakamizo.\(^4\) The size of pustules on her heels became larger. Small pustules tended to coalesce, forming polycyclic pustule lakes. The pathologic finding of sole pustules also shows multilocular epidermal pustules containing some eosinophils and infiltration of many eosinophils in dermis. According to the clinical course, the pustules on her sole responded only partially to previous treatment, but responded dramatically to oral indomethacin. In addition, typical papulopustules of EPF were noted on our patient's face a few months later. Thus, we believe that her sole lesions were an early manifestation of EPF. The patient received oral indomethacin 100 mg per day for more than 1 year. The skin eruption on both face and soles improved dramatically after treatment. The patient started to taper indomethacin dose gradually to avoid skin lesion flare-up.

Previous literature indicated that the mean time period prior to the development of the typical lesions of EPF in the extra-palmoplantar regions was 26 months, ranging from less than 6 months to more than 2 years with the longest being 10 years. EPF has been diagnosed erroneously as PPP or tinea pedis.\(^2\) In our case, the typical facial erythematous pruritic papulopustules were noted a few months later after pustular eruption on bilateral soles. Initially, the patient's condition was erroneously diagnosed as pompholyx. Therefore, for any patients with plantar pustules that respond poorly to ordinary treatment, one should consider the possibility of EPF that initially presents as pompholyx or PPP. Even under pathological examination of the lesioned skin, the epidermal pustules containing predominately neutrophils should not exclude the possibility of EPF, as in our case, especially when a large amount of eosinophil was noted in the dermis.

References