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CORRESPONDENCE

Plantar pustules in a psoriasis patient during the guselkumab therapy

Psoriasis is a chronic inflammatory skin disease, in which cytokines play essential roles in the pathogenesis. One of the pathogenic cytokines in psoriasis is interleukin (IL)-23, and therefore, anti-IL-23 biologics, including guselkumab, are clinically used for the treatment of psoriasis.

Although biologics generally exert significant therapeutic effects in psoriasis, it is known that biologics occasionally induce phenotypic switch of skin eruption in psoriasis patients[1] or cause psoriasiform eruptions in nonpsoriasis patients, which is called paradoxical reaction.[2] Development of palmoplantar pustular eruptions has been reported in various biologics, especially anti-TNF alpha biologics.[3] However, pustular eruptions during the anti-IL-23 biologics have never been reported. Here, we report a case of psoriasis patient showing plantar pustules during the guselkumab therapy.

A 72-year-old female patient, who was diagnosed with psoriasis both clinically and histologically 5 years ago, had been treated with apremilast and topical steroid/vitamin D3 analog. However, her psoriasis lesions had remained on the scalp, face, abdomen, buttocks, and lower legs (Psoriasis Area and Severity Index [PASI] Score: 9.3; Figure 1A). She had no obesity, no arthritis, and no history of smoking. Because her skin condition had not improved sufficiently, and the skin lesions, especially on the face and head, severely impaired her quality of life, we initiated guselkumab (100 mg, subcutaneous injection). Two weeks after the first injection, multiple pustules developed on the bilateral plantar (Figure 1B). The bacterial and fungal culture of the pustules were negative. Histological examination showed a neutrophilic pustule at the sweat duct in epidermis (Figure 1C). The serum level of antistreptolysin O was within the normal range, (12 IU/ml; normal range <239 IU/ml). She had no symptoms of focal infection including dental caries, sinusitis, otitis media, and tonsillitis. She had never exhibited pustules on the palmoplantar area before the treatment of guselkumab. Because her

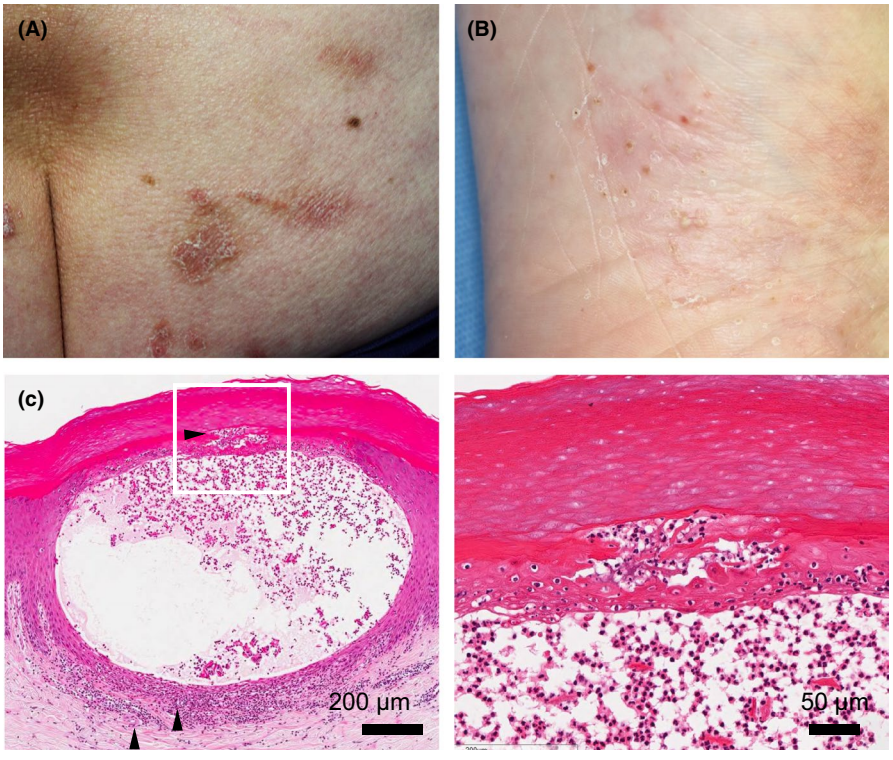

FIGURE 1 Clinical and histopathological findings. (A) Psoriasis lesions remained on her buttocks. (B) Abacterial pustules on the right plantar. (C) HE stained section of a pustule on the plantar. A neutrophilic pustule was observed at the sweat duct (left panel, black arrowheads: sweat duct). Numerous neutrophils were infiltrated (right panel)

psoriasis lesions improved after the guselkumab therapy (PASI score; 2.7), and the pustular eruptions were mild, we decided to continue guselkumab and treated the pustular lesions with a topical steroid (betamethasone butyrate propionate). The pustular lesions gradually improved, and after additional two times of guselkumab injection, her pustules and psoriasis lesions completely disappeared. She had no joint pain for the whole period.

As for the differential diagnosis on the psoriatic eruptions during the biologics therapy in psoriasis patients, there are several possibilities, paradoxical reactions, phenotype switch, and the exacerbation of psoriasis lesions due to the insufficient efficacy of the biologics. In the current case, because the patient has not experienced plantar pustular eruptions before the guselkumab therapy, and the psoriasis lesions responded well to the biologics, we suspect the possibilities of paradoxical reactions or phenotype switch by biologics. Although plantar pustules during the anti-IL-23 biologics have never been reported, plantar pustules are the common type of paradoxical reactions during the biologics, especially anti-TNF-alpha biologics. Development of plantar eruptions has also been reported in anti-IL17 biologics and anti-IL-12/23 biologics.[2,4] Therefore, we need to keep it in mind that any biologics, even anti-IL-23 biologics, have the potential to cause pustular eruptions.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

DECLARATION SECTION

Approval of the research protocol: N/A.
Informed consent: N/A. Pictures are anonymized enough.
Registry and the Registration No. of the study/trial: N/A.
Animal Studies: N/A.

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