

LETTER**WILEY**

Is common variable immunodeficiency a facilitating factor for fixed drug eruptions? Case Report

Dear Editor

Fixed drug eruption (FDE) is a delayed hypersensitivity reaction triggered by drugs occurring on the skin and mucosa. Lesions are characterized with sharp limited erythematous plaques that can sometimes be bullous, recurrent on the skin or the same site of the mucosa in every administration of the drug.¹

1 | CASE

Moxifloxacin 400 mg tablet treatment was initiated due to pneumonia for the 46-year-old female patient while under follow-up in our clinic due to common variable immunodeficiency (CVID). Forty-eight hours after the administration of first moxifloxacin dose, two circular, erythematous, itchy plaques both painful on the frontal face of the right forearm and bulla on erythematous plaque on the palm of left hand and circular erythematous plaque have been developed (Figures 1 and 2). The patient as diagnosed with moxifloxacin-related FDE and moxifloxacin was discontinued. One week later, skin lesions were regressed with hyperpigmentation remained. Three months later, moxifloxacin was prescribed once more due to respiratory tract infection. Six hours after the administration of the initial dose of moxifloxacin, similar lesions have been developed on the same localizations (Figures 3 and 4). Moxifloxacin was discontinued and the lesions were recovered a week after with hyperpigmented eruptions. After 3 months, metranidazole was prescribed to the patient due to diarrhea. Eight hours after the initial dose, a circular, erythematous plaque on the medial part of the left foot has been developed (Figure 5). Metranidazole-related FDA was diagnosed. The patient has previously described the development of similar lesions on the same site after the administration of metranidazole. Metranidazole treatment was discontinued and lesion was regressed a week later with hyperpigmentation remained.

2 | ASSESSMENT IN THE IMMUNOLOGY AND ALLERGY CLINIC

Six weeks after the eruption, upon obtaining the patient's consent, the drug, obtained by crushing from the commercial preparation used and prepared as a fine powder in 20% concentration in vaseline, was placed in white plaster containing aluminum boxes and made ready

and available for the patch testing. It was applied both on the residual hyperpigmented sites and normal sites of the skin. Upon the assessment of the test site after 48 hours, erythema, ulcerative lesion have been detected only on the affected skin and patch test was accepted to be positive. The patient has not accepted the performance of patch test conducted by metranidazole; therefore, it has not been performed.

3 | DISCUSSION

FDE cases induced by quinolons have been reported in the literature. Quinolons that are often responsible for such cases are ciprofloxacin, norfloxacin and ofloxacin and levofloxacin-related FDE have been defined in a few cases. However, a few cases of FDE developed with moxifloxacin have been reported in the literature.²⁻⁴

Although cross sensitivity resulted from imidazole ring against the chemically associated medications has been defined, FDA has been rarely reported against agents that are not interrelated.⁵ By this case, it is aimed to contribute to the literature by presenting a case of FDE related with both moxifloxacin and metranidazole with CVID diagnosis.

Pathogenic mechanism of FDE remains not entirely known. FDE is considered to be a dermatosis induced by intraepidermal CD8⁺ T cells found within the skin homeostasis. CD8⁺ T cells with effector/memory phenotype are widely identified in the dermoepidermal junction in FDE lesions and remain within the recovered FDE lesions after clinical resolution.⁶

CVID refers to a primary immunodeficiency picture, characterized by defective immunoglobulin production due to impaired B-cell differentiation. CVID is the most prevalent symptomatic form of primary antibody deficiency.⁷ B-cell count is normal in most of the patients, however, antigen-specific isotype-switched memory B-cells percentages are decreased. Decreased CD4⁺ T cell, decreased ratio of CD4/CD8 associated with increased CD8⁺ T-cell count in certain patients are among other cellular abnormalities.⁸

Low CD4⁺ T cell (27% [27-47]), high CD8⁺ T cell (47 [19-38%]) level, and low CD4/CD8 ratio (CD4/CD8: 0.57) were observed in our patient. Although we were not able to assess the level of intradermal CD8⁺ T-cell level, we considered that it could be an indication of peripheral CD8⁺ T-cell level. Accordingly, we have aimed to underline that there may be a correlation in this CVID case between the high peripheral CD8⁺ T lymphocyte levels and FDE developed against



FIGURE 1 Two circular, erythematous plaque, after moxifloxacin



FIGURE 2 Bulla on erythematous plaque and circular erythematous plaque, after moxifloxacin



FIGURE 3 Two circular, erythematous plaque, after re-administration of moxifloxacin

drugs that are not interrelated and with different molecular structures.

CONFLICTS OF INTEREST

There are no conflicts of interest in connection with this paper.



FIGURE 4 Bulla on erythematous plaque and circular erythematous plaque, after re-administration of moxifloxacin



FIGURE 5 Circular, erythematous plaque, after metranidazole

AUTHOR CONTRIBUTIONS

All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

DATA AVAILABILITY STATEMENT

Research data are not shared.

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