Case Report

Ofloxacin-induced Fixed Drug Eruptions

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Abstract

Fixed drug eruption (FDE) is a form of drug induced dermatosis condition. Drugs which most commonly induce FDE are antibiotics, anticonvulsants, antiviral agents and even nonsteroidal anti-inflammatory drugs. Here, we report a case of 50-year-old male with history of hepatosplenomegaly for which he was treated at a regional hospital and was prescribed with tablet ofloxacin (200 mg). The patient visited the pulmonary medicine department of our hospital for respiratory complaints and a dermatological reference was made for skin lesions. The findings concluded the case as a drug-induced FDE with pulmonary tuberculosis (TB). The offending drug (tablet ofloxacin) was withdrawn and suitable treatment was provided for FDE and pulmonary TB. One-month follow-up visit reported no fresh respiratory complaints and resolution of skin lesions. Based on this case report, it can be concluded that though FDE is not a common ADR of ofloxacin, caution must be addressed before prescribing it to the patient. For confirmed cases, it is essential to provide education and counseling to the patient and care giver to prevent its recurrence in future.

Keywords: Fixed drug eruption, fluoroquinolone, hypersensitivity, ofloxacin

Introduction

Fixed drug eruption (FDE) is a form of drug-induced skin reaction marked by the red rashes with sharp border, erythematous lesions with or without blister which develops within an hour or even a week after administration of particular drug.[1] It accounts for as much as 16%–21% of all cutaneous adverse drug reactions (ADRs).[2] FDE heals by offending a causative drug with postinflammatory residual hyperpigmentation and flares can recur on readministration of the offending drug or similar class of drugs.[1]

Ofloxacin is a second-generation fluoroquinolone and is highly effective against wide range of bacterial infections. Fluoroquinolones are well-tolerated drugs with mild-to-moderate adverse effects such as gastrointestinal disturbances, skin reactions, and neurological reactions.[3] These are widely used antimicrobials, which can cause cutaneous ADRs in about 1%–2% of patients.[1] Hypersensitivity reactions due to ofloxacin found rarely, ranging in frequency from 0.4% to 2%, respectively.[4] This case report highlights one such event of cutaneous ADR by the use of ofloxacin tablet that caused FDE and multiple erythematous papules with exfoliation of the skin. It was a case of delayed type of hypersensitivity reaction due to ofloxacin.

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Case Report

A 50-year-old male came to the hospital with complaints of intermittent fever for 25 days along with dyspnea (Grade 1 [Modified Medical Research Council]) and cough for 1 month, blood in sputum (1–2 episodes), as well as skin lesions on both palms and soles associated with itching.

Medical history revealed that few days ago, the patient consulted a regional physician for the complaints of abdominal pain, fever, and vomiting where he was diagnosed with mild hepatosplenomegaly, fatty infiltration of liver (Grade 2), and mild prostatomegaly. He was prescribed with tablet ofloxacin (200 mg BID), tablet paracetamol (500 mg SOS), tablet esomeprazole (40 mg OD), syrup lactulose (30 mL HS), and tablet ursodeoxycholic acid (300 mg BD). Within 5–6 days, the patient developed

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erythema multiforme-like rash on the skin and reconsulted the physician. For the symptomatic management, the physician prescribed him tablet prednisolone (20 mg OD) and tablet omeprazole (20 mg BD) for 5 days. No significant improvement was observed, and the patient came to the General Medicine Department of Dhiraj General Hospital for consultation.

Considering the respiratory complaints of the patient, he was referred to the pulmonary medicine department. The general physical examinations were found within normal limits. On admission, the patient was found to be afebrile, pulse rate was 94 beats/min, and blood pressure was 117/74 mmHg. C-reactive protein level was 58.6 mg/L (normal level <5 mg/L) and sputum smear was found positive for pulmonary Koch. Dermatological reference was conducted for skin lesions. The cutaneous examination revealed few crusted erosion over the body, multiple erythematous papules with exfoliation of the skin seen over both palms and soles [Figures 1-3], and multiple tiny grouped ulcers were observed over the hip. According to the patient's medical history and current investigations, the patient was diagnosed with quinolone (ofloxacin)-induced FDEs with pulmonary tuberculosis.

After admission in pulmonary medicine ward, tablet ofloxacin was omitted and the patient was advised not to take medications of this specific class in future. He was prescribed with tablet doxycycline (100 mg BD), DOTS therapy (isoniazid 75 mg [H], rifampicin 150 mg [R], pyrazinamide 400 mg [Z], ethambutol 275 mg [E] [4-0-0]), nebulizer ipratropium bromide (500 mg) + levosalbutamol (1.25 mg) q. i. d and tablet ranitidine (150 mg BD) for respiratory problems and tablet itraconazole (100 mg BD), tablet pheniramine maleate (25 mg OD), tablet cetirizine (10 mg q. a. m.) to manage hypersensitivity reaction.

Gradually, the erosions began to heal with the help of medications and the patient was discharged after 4 days of hospitalization with topical lotion (clotrimazole cream BD). On follow-up visit (after 1 month), his skin lesions recovered well without any complications and no further respiratory complaints were noted. To assess the causal relationship between the drug and reaction, Naranjo's causality scale was used by which score obtained for ofloxacin-induced FDE was "6", which falls under the "Probable" category.

Discussion

Ofloxacin is a fluoroquinolone used to treat bacterial infections of the lungs, skin, prostate, and urinary tract (bladder and kidneys). Postmarketing surveillance has reported cases of hypersensitivity reactions (anaphylactic reactions/shock).[5] The term FDE implies the development of one or more annular or oval erythematous patches in response to an exposure of a medication. Several morphological variants of FDE are known based on their clinical features and the disposition of the lesion, for example, pigmenting and nonpigmeting FDE and bullous FDE.[6]

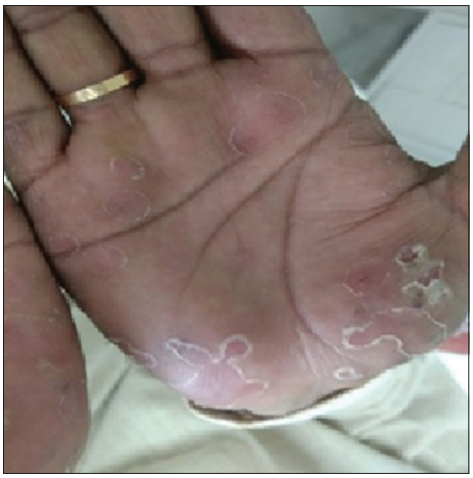

Figure 1: Multiple erythematous papules with exfoliation of the skin over the right hand palm

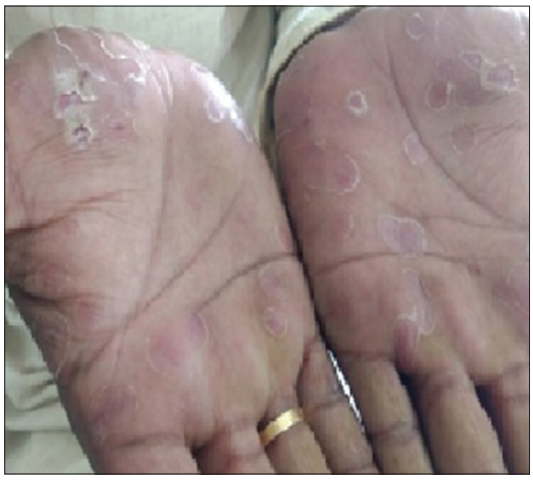

Figure 2: Multiple erythematous papules with exfoliation of the skin over both palms

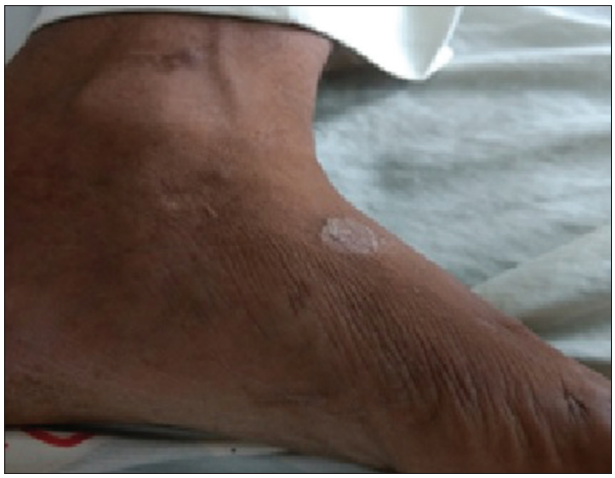

Figure 3: Erythematous papules with exfoliation of the skin over the feet

A systematic review by Kamdi *et al*. reported that 28% of ADRs occur due to antimicrobials. Furthermore, the incidence rate of ofloxacin-induced ADRs is 4.27%.[7]

Research suggests that the pathophysiological process may involve an antibody-dependent, cell-mediated cytotoxic response. The CD8+ effector or memory T cells play an important role in reactivation of the reaction with re-exposure to the causative drug. The exact mechanism is yet unknown.[6] However, literature shows that the development of localized tissue damage occured in FDE is mainly due to an involvement of intraepidermal CD8+ T cell along with effector-memory phenotype and awakening of these cells provoke the skin lesion.[8] The IgE-mediated hypersensitivity reaction and delayed type of hypersensitivity reaction both can occur due to an exposure to ofloxacin and other quinolones.[1,9]

Our patient showed the clinical features of hypersensitivity reaction with multiple erythematous papules and exfoliation over palms and foot. Causality assessment for this ADR was made using Naranjo's Causality assessment scale and the Naranjo's score was found to be 6; thus, ADR was classified as "probable" one. Similarly, a case series published by Ramani *et al*. also reported such relation as "Probable."[10] The criteria fulfilled in causality assessment were: the adverse event appeared after the suspected drug was administered, the adverse reaction improved when the drug was discontinued, there were no alternative causes that could on their own cause the reaction, and the adverse event was confirmed by objective evidence.

For such reactions, the main goal of treatment should be discontinuation of the offending drug and administration of systemic antihistamines or topical corticosteroids may be required.[6] In this case, initially, the local physician prescribed oral corticosteroid (tablet prednisolone) for the skin lesion, which was discontinued when the patient reported to Dhiraj General Hospital and was prescribed with tablet cetirizine along with tablet pheniramine maleate which were considered as better alternatives to the corticosteroid therapy in terms of efficacy and safety. The patient responded well to the treatment and the erythematous lesions were subsided when the patient came for follow up after 1 month.

Declaration of patient consent

The authors declared that the patient consent was obtained to take picture and to access other necessary clinical information to be reported in journal. The patient's name and initials are not published and their identity is hidden.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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