

Fixed drug eruption due to norfloxacin with cross-reactivity to ciprofloxacin: A case report

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KEYWORDS: case report, fixed drug eruption, quinolones

Fixed drug eruptions (FDEs) represent 16% to 21% of all cutaneous adverse reactions to drugs.^{1,2} Here we present a rarely reported case of FDE caused by norfloxacin with cross-reactivity to ciprofloxacin.

CASE REPORT

A 63-year-old female schoolteacher presented to our emergency department with multiple tender erythematous-violaceous oval plaques on the neck, diameters ranging from 3 to 6 cm, with 48 hours of progression. She also reported polyarthralgia, malaise, and fever developing at the same time. The patient had been medicated with an antibiotic she could not recall 2 weeks ago, due to cystitis, and completed treatment 1 week prior to admission. She denied any relevant medical history, other current or prior medication, or known allergies.

No abnormalities were found in hemogram or blood biochemistry tests. A provisional diagnosis of FDE was made, and the patient was asked to clarify the name of the antibiotic and not to take it again. She was also prescribed prednisolone 20 mg qd for 5 days, after which all her complaints resolved except residual hyperpigmentation.

The patient returned 3 months after initial presentation with identical complaints (Figure 1). She admitted taking the same antibiotic, which was now identified as norfloxacin, 2 days before, due to a new episode of cystitis, despite our previous advice. Skin biopsy was performed and a new cycle of prednisolone as before was prescribed, which led to resolution of the FDE.

Patch tests were performed after 3 months with the Portuguese Group for the Study of Contact Dermatitis (GPEDC) baseline series (Chemotechnique Diagnostics, Vellinge, Sweden), norfloxacin 10% pet., and ciprofloxacin 10% pet. (Chemotechnique Diagnostics), both tested in previously affected and in nonaffected skin, in occlusion under IQ Ultra chambers (Chemotechnique Diagnostics) for 24 hours.

Positive reactions (+) were seen on day (D) 2 in the previously affected skin area to both norfloxacin and ciprofloxacin (Figure 2), whereas nonlesional areas remained negative on D2 and D4 for any allergen. The histopathology was compatible with FDE.

DISCUSSION

We describe an unusual case of FDE, where the diagnosis was confirmed by an unintentional oral challenge test, which remains the gold



FIGURE 1 Clinical presentation of the acute fixed drug eruption

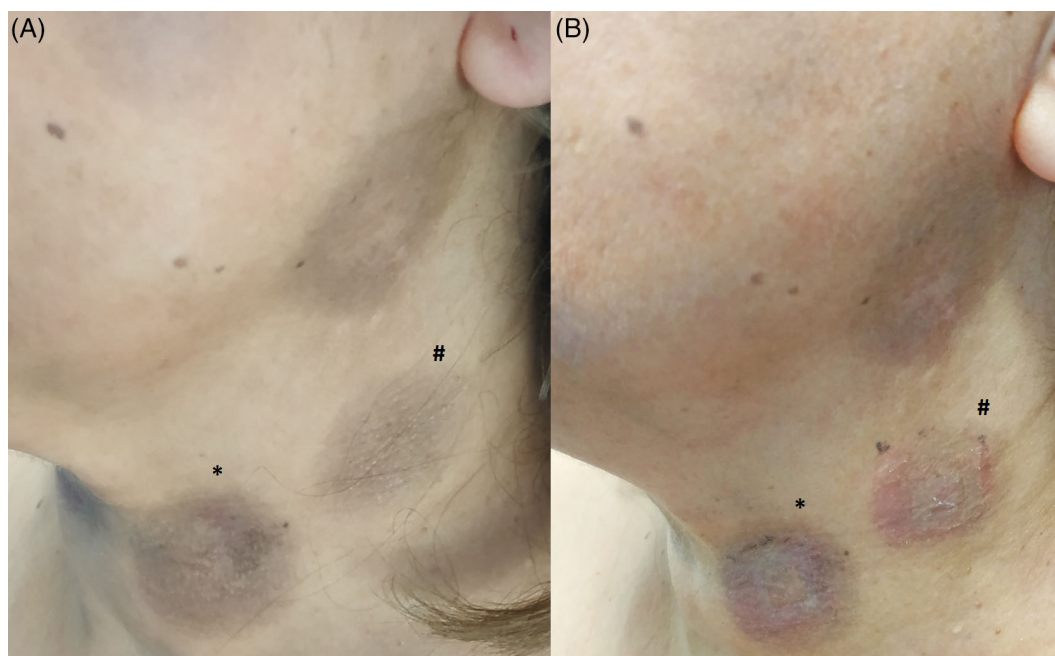


FIGURE 2 Patch test results on (A) day (D) 0 and (B) D2. The hyperpigmented residual lesions become infiltrated and erythematous-violaceous in the sites of application of norfloxacin 10% pet. (*) and ciprofloxacin 10% pet. (#) in occlusion for 24 hours

standard for diagnosis of FDE. The implicated drug was norfloxacin, which has been rarely described in the literature as a causative agent of FDE.^{3,4} In this case, the patch tests were not necessary for diagnosis, but provided additional evidence and allowed to identify cross-reactivity to ciprofloxacin, another drug of the same pharmacological class, thus supporting a recommendation for future avoidance of quinolones.

Quinolones have rarely been implicated in FDE. In the published cases, patch test positivity is variable, as is the evidence for cross-reactivity to other drugs from the same pharmacological class.³⁻⁵

In the presence of suggestive symptoms and clinical picture, FDE must always be considered in the differential diagnosis and an exhaustive medical history is paramount for successful identification of the culprit. Patch testing is of benefit in these situations as positivity may obviate the need for oral challenge tests and may help clarify potential cross-reactivities. As patch test positivity is variable, a negative result must never be considered as evidence for drug safety, or to exclude a diagnosis of FDE.

CONFLICTS OF INTEREST

The authors declare no conflict of interests

AUTHOR CONTRIBUTIONS

Miguel Alpalhão: Conceptualization; data curation; formal analysis; investigation; methodology; project administration; resources; supervision; validation; visualization; writing-original draft; writing-review and editing. **Joana Antunes:** Conceptualization; data curation; formal analysis; methodology; supervision; validation; visualization; writing-original draft; writing-review and editing. **Luís Soares-Almeida:** Conceptualization; formal analysis; methodology; resources; supervision; validation; visualization; writing-original draft; writing-review and editing. **Teresa E Correia:**

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REFERENCES

1. Mahboob A, Haroon TS. Drugs causing fixed eruptions: a study of 450 cases. *Int J Dermatol*. 1998;37(11):833-888.
2. Ozkaya BE. Specific site involvement in fixed drug eruption. *J Am Acad Dermatol*. 2003;49(6):1003-1007.
3. Hager JL, Mir MR, Hsu S. Fluoroquinolone-induced generalized fixed drug eruption. *Dermatol Online J*. 2009;15(12) <https://escholarship.org/uc/item/5cz3r80b>. Accessed 22 March 2020.
4. Sánchez-Morillas L, Rojas Pérez-Ezquerro P, González Morales ML, Mayorga C, González-Mendiola R, Laguna Martínez JJ. Fixed drug eruption due to norfloxacin and cross-reactivity with other quinolones. *Allergol Immunopathol*. 2013;41(1):60-61.
5. Jain SP, Jain PA. Bullous fixed drug eruption to ciprofloxacin: a case report. *J Clin Diagn Res*. 2013;7(4):744-745.

How to cite this article: Alpalhão M, Antunes J, Soares-Almeida L, Correia TE, Filipe P. Fixed drug eruption due to norfloxacin with cross-reactivity to ciprofloxacin: A case report. *Contact Dermatitis*. 2020;1-2. <https://doi.org/10.1111/cod.13544>