

Disseminated Fixed Drug Eruption: Unmasking a Rare Presentation of Furazolidone and Metronidazole Combination Therapy

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DOI: <https://doi.org/10.52403/ijhsr.20240525>

ABSTRACT

Fixed drug eruption (FDE) is an uncommon cutaneous adverse reaction characterized by recurrent erythematous or violaceous plaques at fixed sites upon re-exposure to the culprit drug. We present a case of disseminated FDE in a 45-year-old male who developed widespread erythematous lesions involving multiple body sites following concurrent administration of furazolidone and metronidazole for gastrointestinal infection. Histopathological examination revealed typical features consistent with FDE. The patient was managed with cessation of the offending medications and supportive treatment, leading to resolution of the lesions without recurrence. This case underscores the importance of recognizing disseminated FDE as a potential adverse effect of commonly used medications, necessitating prompt identification and appropriate management strategies.

Keywords: Fixed drug eruption, disseminated, furazolidone, metronidazole, adverse drug reaction.

INTRODUCTION

Fixed drug eruption (FDE) represents a distinctive cutaneous adverse drug reaction characterized by the recurrent appearance of well-demarcated erythematous or violaceous plaques upon re-exposure to the offending medication [1]. Although relatively uncommon, FDE poses significant clinical challenges due to its potential for recurrence and variable presentation. Antimicrobial agents, particularly antibiotics, have been frequently implicated as causative agents of FDE, highlighting the

importance of recognizing this adverse reaction in clinical practice [2]. Furazolidone, a synthetic nitrofurantoin derivative, and metronidazole, a nitroimidazole antibiotic, are commonly prescribed antimicrobial agents utilized in the treatment of various infectious diseases, including gastrointestinal infections [3,4]. While effective, these medications have been associated with a spectrum of cutaneous adverse reactions, ranging from mild erythema to severe forms of hypersensitivity reactions [5,6]. Despite

their widespread use, reports of disseminated fixed drug eruption (DFDE) associated with furazolidone and metronidazole combination therapy remain scarce in the literature. DFDE represents an uncommon variant of FDE characterized by the widespread distribution of cutaneous lesions beyond the typical fixed sites [7]. Understanding the clinical features, pathogenesis, and management of DFDE is essential for clinicians to promptly recognize and appropriately manage this potentially serious adverse reaction.

In this context, we present a rare case of disseminated fixed drug eruption associated with furazolidone and metronidazole combination therapy, highlighting the clinical challenges encountered in diagnosis and management. Through this case report, we aim to enhance awareness among clinicians regarding the potential occurrence of DFDE with antimicrobial agents and underscore the importance of vigilant monitoring and appropriate therapeutic interventions.

CASE PRESENTATION

A 45-year-old Male presented to the dermatology department with a chief complaint of widespread skin lesions associated with itching and discomfort. The lesions had started to appear three days prior and had rapidly spread over his body. The patient reported a history of recent gastrointestinal infection for which he sought medical attention from his primary care physician. He was prescribed a combination therapy comprising furazolidone and metronidazole for the treatment of his gastrointestinal symptoms. Upon examination, the patient exhibited multiple erythematous, well-demarcated plaques distributed across his trunk, extremities, and mucosal surfaces, including

the lips and genitalia. The lesions ranged in size from small macules to larger plaques [Figure 1]. The affected areas were tender to palpation, and the patient complained of itching and burning sensations. A thorough review of the patient's medical history revealed no previous episodes of similar skin reactions or known allergies to medications. However, she reported using over-the-counter analgesics for headache relief occasionally. Given the clinical presentation and temporal relationship between the initiation of antimicrobial therapy and the onset of skin lesions, a provisional diagnosis of disseminated fixed drug eruption (DFDE) was considered. Differential diagnoses, including viral exanthems, erythema multiforme, and Stevens-Johnson syndrome/toxic epidermal necrolysis (SJS/TEN), were also entertained and evaluated. To confirm the diagnosis, a skin biopsy was performed from an active plaque on the trunk. Histopathological examination revealed superficial perivascular lymphocytic infiltration, basal cell vacuolar degeneration, and scattered necrotic keratinocytes, consistent with the diagnosis of fixed drug eruption [Figure 2]. The patient was promptly instructed to discontinue the use of furazolidone and metronidazole and was provided with supportive treatment, including topical corticosteroids and antihistamines, to alleviate symptoms. Close monitoring of the patient's clinical progress was initiated, with regular follow-up visits scheduled to assess the resolution of skin lesions and monitor for any potential complications. This case presentation highlights the clinical features and diagnostic considerations in a patient presenting with disseminated fixed drug eruption associated with furazolidone and metronidazole combination therapy.



Figure 1: Disseminated Lesions Of FDE On Trunk,Back,Axilla And Groin Region.

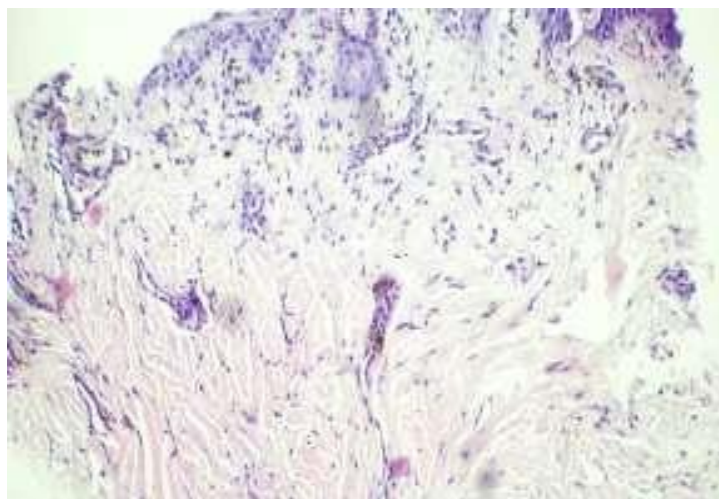


Figure 2: Histological picture revealing Superficial Perivascular Lymphocytic Infiltration, Basal Cell Vacuolar Degeneration, And Scattered Necrotic Keratinocytes

DISCUSSION

Fixed drug eruption (FDE) is a well-recognized cutaneous adverse drug reaction characterized by the recurrent appearance of erythematous or violaceous plaques at fixed sites upon re-exposure to the offending medication [1]. While the pathogenesis of FDE remains incompletely understood, it is believed to involve a delayed-type hypersensitivity reaction mediated by cytotoxic T lymphocytes, resulting in tissue damage and inflammation [2]. In the presented case, the patient developed disseminated fixed drug eruption (DFDE) following the administration of furazolidone

and metronidazole combination therapy for gastrointestinal infection. DFDE represents an uncommon variant of FDE characterized by the widespread distribution of cutaneous lesions beyond the typical fixed sites [3]. Although DFDE is relatively rare, its recognition is essential due to its potential for significant morbidity and mortality, especially if not promptly identified and managed. The clinical presentation of DFDE typically involves the sudden onset of widespread erythematous plaques involving multiple body sites, including the trunk, extremities, and mucosal surfaces [4]. The lesions may vary in size and

morphology, ranging from small macules to large plaques with central erosions, as observed in our patient. Importantly, DFDE can mimic other dermatological conditions, including viral exanthems, erythema multiforme, and Stevens-Johnson syndrome/toxic epidermal necrolysis (SJS/TEN), underscoring the importance of a thorough clinical evaluation and histopathological confirmation. Histopathological examination of skin biopsy specimens in DFDE typically reveals superficial perivascular lymphocytic infiltration, basal cell vacuolar degeneration, and scattered necrotic keratinocytes, consistent with the diagnosis of FDE [5]. In our case, the histopathological findings supported the clinical suspicion of DFDE, aiding in the confirmation of the diagnosis. The management of DFDE primarily involves the prompt identification and cessation of the offending medication, supportive treatment to alleviate symptoms, and close monitoring for potential complications [6]. In our patient, discontinuation of furazolidone and metronidazole was accompanied by the initiation of topical corticosteroids and antihistamines to provide symptomatic relief. Regular follow-up visits were scheduled to monitor the resolution of skin lesions and assess for any signs of disease progression.

CONCLUSION

In conclusion, we present a rare case of disseminated fixed drug eruption associated with furazolidone and metronidazole combination therapy. This case underscores the importance of considering DFDE in the differential diagnosis of patients presenting with widespread cutaneous lesions following antimicrobial therapy. Early recognition and appropriate management are essential to prevent disease progression and ensure favorable outcomes. Overall, this case highlights the importance of vigilant monitoring for cutaneous adverse reactions in patients receiving antimicrobial therapy and emphasizes the need for prompt

recognition and appropriate management of DFDE to ensure favorable outcomes. Through the dissemination of this case, we aim to raise awareness among clinicians regarding the potential occurrence of DFDE with antimicrobial agents and emphasize the significance of a thorough clinical evaluation and histopathological confirmation in the diagnosis and management of this condition. As we continue to encounter diverse drug reactions in clinical practice, further research and reporting of similar cases are warranted to enhance our understanding of DFDE and optimize patient care.

Declaration by Authors

Acknowledgement:

We would like to express our gratitude to the patient who consented to the publication of this case report. We also acknowledge the healthcare team involved in the diagnosis and management of the patient. Their dedication and expertise were invaluable in ensuring the well-being of the patient throughout the course of treatment.

Source of Funding: None

Conflict of Interest: The authors declare no conflict of interest.

REFERENCES

1. Criado, P.R., et al. Fixed drug eruption: state of the art. *Clinics in Dermatology*, 2018, 36(2): 201-206.
2. Shiohara, T., et al. Fixed drug eruption: pathogenesis and diagnostic tests. *Current Opinion in Allergy and Clinical Immunology*, 2009, 9(4): 316-321.
3. Patel, K., et al. Furazolidone: a review. *British Journal of Clinical Pharmacology*, 2020, 86(2): 217-226.
4. Gavignet, B., et al. Adverse effects of antimicrobial agents: an update. *Drugs*, 2021, 81(7): 813-842.
5. Thiers, B.H., et al. Drug eruptions: reactions to medications. In: *Fitzpatrick's Dermatology in General Medicine*, 8th ed. McGraw-Hill Education, 2012.
6. Mockenhaupt, M. Drug-induced skin reactions. *Advances in Experimental*

- Medicine and Biology, 2020, 1267: 107-129.
7. Stern, R.S. Clinical practice. Exanthematous drug eruptions. New England Journal of Medicine, 2012, 366(26): 2492-2501.

How to cite this article: Saurabh, Praveen Kumar Rathore, Pushpendra Singh, Ashwin Charaniya, Akanksha Singh. Disseminated fixed drug eruption: unmasking a rare presentation of furazolidone and metronidazole combination therapy. *Int J Health Sci Res.* 2024; 14(5):210-214. DOI: [10.52403/ijhsr.20240525](https://doi.org/10.52403/ijhsr.20240525)
