

Recall Dermatitis to Metronidazole

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Background and Objective: Recall dermatitis is an uncommon entity that has been noted with patch testing, repeat exposures to a medication or allergen, and the concurrent use of ultraviolet radiation and certain medications. Recall dermatitis from primary cutaneous exposure and subsequent oral exposure are rare, and the etiology remains unknown.

Conclusion: We report a case of recall dermatitis with a drug eruption secondary to metronidazole. Therapy with this medication was initially topical for rosacea and subsequently oral for a gastrointestinal infection. This case draws attention to the use of metronidazole and the risk of recall dermatitis.

Contexte et objectif: La dermatite immunitaire secondaire est une affection rare, qui s'observe à la suite de la réalisation de tests épicutanés, de réexpositions à des médicaments ou à des allergènes ou encore de l'emploi concomitant des rayons ultraviolets et de certains médicaments. La dermatite immunitaire secondaire, liée à une première exposition à une substance par voie cutanée et à une exposition ultérieure par voie orale à cette même substance est un phénomène rare, de cause inconnue.

Conclusions: Sera exposé ici un cas de dermatite immunitaire secondaire, se manifestant par une éruption d'origine médicamenteuse, consécutive à l'utilisation du métronidazole. Le médicament avait été employé une première fois par voie topique pour traiter la rosacée et une deuxième fois par voie orale pour traiter une infection gastro-intestinale. Ce cas attire l'attention sur l'utilisation du métronidazole et sur le risque de dermatite immunitaire secondaire.

A 45-YEAR-OLD FEMALE presented with redness, swelling, and papular lesions on her forehead, chin, nose, and bilateral malar prominences. She was diagnosed with facial rosacea by a dermatologist. After using metronidazole-based topical preparations, her facial symptoms worsened. Given her recalcitrant facial rosacea, a patch test to 1% metronidazole in petrolatum was performed. An IQ Ultra Chamber was used for the test and adhered to the patient's back using Scanpor tape (Epitest Ltd Oy, Tuusula, Finland). The results were read using the International Contact Dermatitis Research Group grading scale at 2 days and 7 days after application.

At 7 days, she showed a 2+ positive reaction to the 1% metronidazole in petrolatum with a negative control (Figure 1). During the patch testing, the patient had a recall of the original dermatitis on her face, indicating an

initial severe contact dermatitis. She was diagnosed with a recall contact dermatitis of the face.

Approximately 1 year later, she was given oral metronidazole for a gastrointestinal infection. Following 3 days of oral metronidazole therapy, she developed an exudative dermatitis on the cheeks (Figure 2) and a maculopapular, erythematous, and edematous eruption of the flexures, chest, and legs. On presentation to the emergency department, she was afebrile, with no shortness of breath or stridor. She was treated with diphenhydramine,



Figure 1. Patch test positivity to 1% metronidazole.

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Figure 2. Exudative recall dermatitis.

epinephrine, famotidine, and methylprednisolone. A dermatologist subsequently diagnosed her facial eruption as a recall dermatitis. The diffuse eruption on her body was most consistent with a simple morbilliform drug eruption.

Discussion

Traditionally, *recall dermatitis* has been a term used for inflammatory skin eruptions at sites previously irradiated after pharmacologic therapy for various malignancies.¹ However, recall dermatitis has also been noted with patch testing, repeat exposures, and the simultaneous use of ultraviolet radiation and medications, such as certain antibiotics.² The etiology of such recall reactions remains unknown. A study by Moller and colleagues in 1999 found a significant increase in tumor necrosis factor α , soluble tumor necrosis factor receptor 1, interleukin-1 receptor antagonist, and neutrophil gelatinase-associated lipocalin in

patients known to be allergic to gold and reexposed to the substance.³ This study hypothesized that cytokine release should be considered characteristic of recall reactions.

Recall dermatitis from primary cutaneous exposure and subsequent oral exposure is rare. Reported cases show recall dermatitis occurring from both intravenous and oral exposure, with onset as soon as hours and as delayed as months.⁴ Two cases were reported in 2003 by Kirkup and colleagues in which 5-fluorouracil was used topically for actinic keratoses.⁵ Subsequent parenteral administration of the medication for a gastrointestinal malignancy resulted in a recall of the cutaneous inflammation seen during the initial topical application.

The case described in this report highlights a recall dermatitis to metronidazole with both patch testing and subsequent oral administration of the medication. This case draws attention to the use of metronidazole and the risk of recall dermatitis, as well as the need for more research in the area of recall reactions.

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References

1. Jain S, Agarwal J, Laskar S, et al. Radiation recall dermatitis with gatifloxacin: a review of literature. *J Med Imaging Radiat Oncol* 2008; 52:191–3, doi:[10.1111/j.1440-1673.2008.01942.x](https://doi.org/10.1111/j.1440-1673.2008.01942.x).
2. Krishnan R, Lewis A, Kass J, et al. Ultraviolet recall-like phenomenon occurring after piperacillin, tobramycin and ciprofloxacin therapy. *J Am Acad Dermatol* 2001;44:1045–7, doi:[10.1067/mjd.2001.113457](https://doi.org/10.1067/mjd.2001.113457).
3. Moller H, Ohlsson K, Linder C, et al. The flare-up reactions after systemic provocation in contact allergy to nickel and gold. *Contact Dermatitis* 1999;40:200–4, doi:[10.1111/j.1600-0536.1999.tb06034.x](https://doi.org/10.1111/j.1600-0536.1999.tb06034.x).
4. Jacob S, Barland C, El Saie M. Patch-test-induced “flare-up” reactions to neomycin at prior biopsy sites. *Dermatitis* 2008;19:E46–8.
5. Kirkup M, Narayan S, Kennedy C. Cutaneous recall reactions with systemic fluorouracil. *Dermatology* 2003;206:175–6, doi:[10.1159/000068455](https://doi.org/10.1159/000068455).