



## Methotrexate Induced Muco-Cutaneous Ulcer: A Case Report

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### ABSTRACT

In recent years, the use of methotrexate, a commonly prescribed immunosuppressive agent, has gained prominence in the management of various autoimmune disorders and malignancies. However, alongside its therapeutic benefits, methotrexate administration has been associated with several adverse effects. One noteworthy complication is the development of oral ulcers, which can significantly impact patients' quality of life and treatment adherence. This case report presents a detailed examination of a patient who developed oral ulcers subsequent to methotrexate therapy. By analyzing the clinical course, potential mechanisms, and management strategies employed, this report sheds light on the importance of vigilant monitoring and proactive management of methotrexate-induced muco-cutaneous ulcers to ensure optimal patient care.

**Keywords:** Methotrexate (MTX), Muco-cutaneous ulcer, Psoriasis.

### INTRODUCTION

Methotrexate (MTX) is a commonly prescribed medication in the treatment of autoimmune conditions such as rheumatoid arthritis (RA) and psoriasis. MTX is a folic acid analog and DNA synthesis inhibitor that competitively inhibits dihydrofolate reductase. Well-known side effects of MTX include diarrhea, nausea/vomiting, anorexia, stomatitis, fatigue, and malaise.<sup>1</sup> Cutaneous ulceration is a less commonly described sign of MTX toxicity in patients with psoriasis. Reported risk factors include relatively high MTX dosage, renal impairment, concurrent non-steroidal anti-inflammatory drugs, age older than 55, folate deficiency, low serum albumin, and drug interactions.<sup>2</sup> Since 2011, only 5 cases have been reported.<sup>3</sup> In this case, we report MTX-induced muco-cutaneous ulceration in psoriatic patient.

### Case Description

A 59-year-old female, who was diagnosed as a case of psoriasis, despite prior treatment the patient condition got worsened and she was presented with a persistent and evolving rash over her body for two months. Initially appearing on her left forearm, the itchy red raised lesions spread to involve both forearms, thighs, and legs for which she was prescribed with tablet methotrexate 5mg daily for the past 7 days by private practitioner, which later lead to the emergence of painful muco-cutaneous ulcers.

Upon admission, General examination was unremarkable except for vitals within normal limits. On local muco-cutaneous examination, revealed dusky to erythematous lesions with central erosions on the extremities, along with curdy white slough in the oral cavity. The complexity of this case was underscored by deranged blood sugar levels and elevated liver enzyme levels, prompting interdisciplinary

collaboration for comprehensive management. Treatment encompassed intravenous medications (injection dexamethasone 2ml and injection pheniramine 2ml OD), fluid therapy, local applications which includes mucaïne gel, and nutritional support and the suspected medication was stopped thereafter.

This case illustrates the challenges posed by evolving dermatological and systemic symptoms, necessitating a multifaceted approach to care. After 7 days of continuous management and monitoring, the patient's condition improved with an improvement in muco-cutaneous ulcers.

### Case Discussion

MTX-induced cutaneous ulceration in psoriatic patients is a rare side effect of low-dose MTX treatment and can be an indicator of life-threatening pancytopenia.<sup>4</sup> In this case, we report MTX-induced cutaneous ulceration in psoriatic female patient. Similar to previously reported cases, cutaneous ulceration resolved in our patient after discontinuation of MTX.<sup>1,2</sup> Although cutaneous ulcerations from MTX treatment are not life threatening, the pancytopenia caused by bone marrow suppression can be fatal.<sup>4</sup> The treatment approach involves addressing the acute symptoms through intravenous medications, hydration, and local applications. The follow-up assessments showed improvement in her condition. The decision to consult a medical specialist for further management raises concerns about potential underlying health issues. Continued monitoring and management of the patient's dermatological symptoms, as well as her systemic health, will be essential to achieve a complete recovery. The multidisciplinary approach taken by dermatology and internal medicine specialists underscores the complexity of the patient's condition and the need for comprehensive care.





**Figure 1:** mucocutaneous oral ulcer

In this case, the patient developed an adverse reaction within seven days following administration of methotrexate. Naranjo's algorithm was used to determine a plausible reaction due to methotrexate. The following criteria were considered:

Naranjo's algorithm for causality assessment	Yes	No	Unknown
The adverse event appeared after methotrexate was administered	2	-1	0
Adverse event improved when methotrexate was discontinued	1	0	0
Adverse event reappeared when methotrexate was re-administered	2	-1	0
Alternate causes that could solely have caused the reaction	-1	2	0
The patient had a similar reaction to the same or similar drugs in any previous exposure	1	0	0
The adverse event confirmed by objective evidence.	1	0	0

Based on the total score of 5, this muco-cutaneous ulcer was categorized as 'probable' reaction to methotrexate administration.

### CONCLUSION

This case report underscores the complexity of methotrexate-induced adverse reactions, exemplified by the intricate interplay between cutaneous manifestations and oral ulcers. The patient's evolving presentation highlights the significance of timely recognition, thorough evaluation, and interdisciplinary collaboration in managing such cases. With the potential for diverse adverse effects associated with widely used medications like methotrexate, healthcare practitioners should remain vigilant and consider the broader impact of treatment on patients' overall well-being. Through comprehensive patient care and tailored therapeutic strategies, we can optimize outcomes and enhance patient quality of life. This case serves as a reminder of the multifaceted nature of medication-related adverse events and the critical role of integrated medical approaches in delivering effective patient care.

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