

**PACLITAXEL-INDUCED ECZEMATOUS DERMATITIS PRESENTING AS
NUMMULAR DERMATITIS: A RARE CUTANEOUS REACTION****Osman Emre Karaarslan^{1*}, Mustafa Alperen Aydeniz¹, Özlem Canöz², Eda Öksüm Solak¹, Murat Borlu¹**¹Department of Dermatology and Venereology, Erciyes University Medical School, Kayseri, Turkey.²Department of Pathology, Erciyes University Medical School, Kayseri, Turkey.

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ABSTRACT

Paclitaxel is a taxane derivative widely used in the treatment of various solid tumors, particularly breast cancer, and is associated with a range of dermatologic adverse effects. However, there are no reports in the literature describing eczematous reactions presenting in the form of nummular dermatitis. Herein, we present a rare cutaneous reaction manifesting as nummular dermatitis in a 55-year-old female patient receiving paclitaxel therapy. After the fourth cycle of treatment, the patient developed well-demarcated eczematous plaques on the lower extremities. Based on clinical evaluation and punch biopsy findings, a diagnosis of nummular dermatitis was established. Marked improvement of the lesions was achieved with systemic corticosteroids, topical therapy, and antihistamines. Drug-induced dermatologic reactions should be considered in the differential diagnosis of newly developed eczematous eruptions in patients undergoing chemotherapy. Early recognition and appropriate management may prevent unnecessary interruption of oncologic treatment.

KEYWORDS: Paclitaxel; nummular dermatitis; drug-induced cutaneous reaction; chemotherapy; eczematous dermatitis.**INTRODUCTION**

Nummular dermatitis is a chronic type of eczema characterized by coin-shaped, well-demarcated erythematous plaques, typically located on the trunk and extremities.^[1,2] Its etiopathogenesis is thought to involve impairment of the skin barrier function, environmental factors, and various systemic diseases; additionally, cases associated with the use of certain systemic medications have been reported.^[4,6]

Taxane chemotherapeutic agents, such as paclitaxel and docetaxel, are widely used in the treatment of various solid tumors, particularly breast cancer.^[3,4] A range of dermatologic adverse effects, including maculopapular eruptions, pustular eruptions, hand-foot syndrome, phototoxic reactions, and eczematous dermatitis, have been frequently reported in association with these agents.^[1] However, to date, there have been no reports of eczematous reactions presenting specifically in the form of nummular dermatitis.

In this study, we present a rare cutaneous reaction in a patient receiving paclitaxel therapy for breast cancer, which was clinically and histopathologically consistent with nummular dermatitis.

CASE REPORT

A 55-year-old female patient with a diagnosis of invasive breast carcinoma, under follow-up by the oncology department, presented to our clinic with pruritic eruptions that developed on various parts of her body following chemotherapy. The lesions were reported to have appeared after the fourth cycle of paclitaxel therapy, and the patient had not received any prior treatment for these symptoms. Her past medical history was unremarkable, with no comorbidities or regular medication use, and her family history was noncontributory. Dermatological examination revealed multiple, annular, well-demarcated eczematous plaques with areas of erosion, exudation, and yellowish crusting, distributed over the distal anterior aspects of the bilateral

thighs, knees, ankles, dorsum of the feet, and proximal anterior surface of the right tibia (Fig. 1A). Close-up views of the lesions prior to treatment are shown in Fig. 2A for the plaque located on the proximal anterior surface of the right tibia and in Fig. 3A for the plaque on the distal anterior aspect of the left thigh. Laboratory investigations showed no abnormal findings. Based on clinical evaluation, a diagnosis of nummular dermatitis secondary to paclitaxel was considered, and a 4-mm punch biopsy was performed. The patient was treated with intramuscular methylprednisolone (40 mg/day), a topical preparation containing betamethasone 0.05% and gentamicin 0.1% (twice daily), and oral levocetirizine

(10 mg/day). At the 3-day follow-up, marked improvement of the lesions was observed. Systemic corticosteroid therapy was continued at a dose of 20 mg/day for an additional three days and then discontinued. Despite the dermatological findings, paclitaxel therapy was not interrupted, and oncologic treatment was continued according to the existing protocol. At the 1-month follow-up, the lesions had markedly regressed (Fig. 1B), and the patient showed significant clinical improvement. Close-up views of the post-treatment lesions are presented in Fig. 2B for the right tibial lesion and Fig. 3B for the lesion on the left thigh.



Fig. 1. Multiple, annular, well-demarcated eczematous plaques with areas of erosion, exudation, and yellowish crusting, distributed over the distal anterior aspects of the bilateral thighs, knees, ankles, dorsum of the feet, and proximal anterior surface of the right tibia (A, before treatment; B, after treatment).

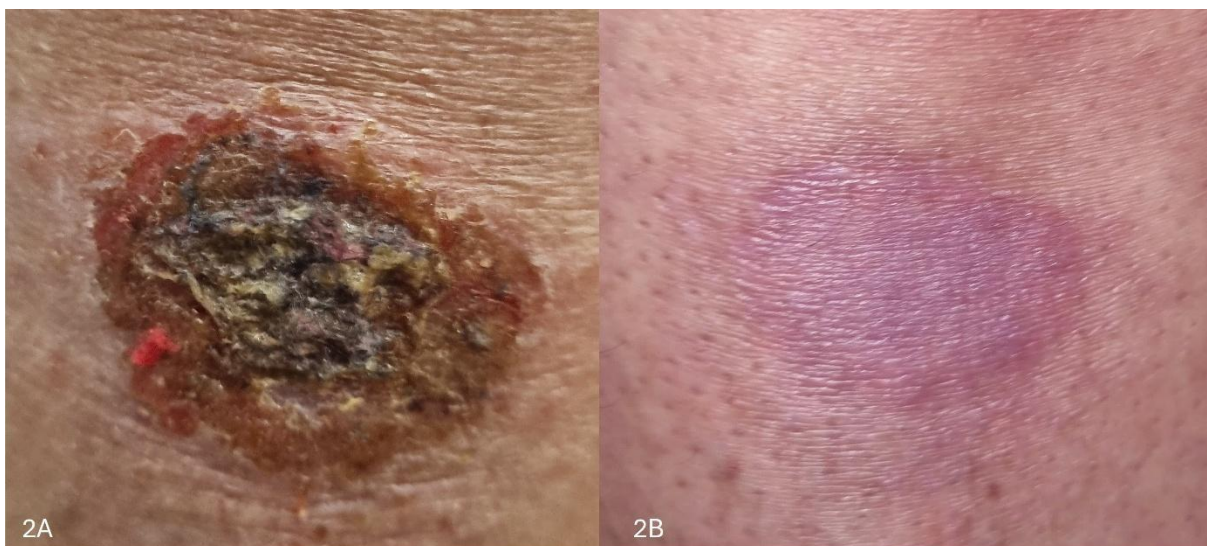


Fig. 2. Clinical appearance of the eczematous plaque located on the proximal anterior surface of the right tibia (A, before treatment; B, after treatment).



Fig. 3. Clinical appearance of the eczematous plaque located on the distal anterior aspect of the left thigh (A, before treatment; B, after treatment).

Histopathological examination revealed excoriation, hyperkeratosis, and acanthosis in the epidermis (Fig. 4), along with capillary proliferation, chronic inflammatory infiltration, and superficial fibroplasia in the dermis (Fig.

5). High-power examination demonstrated lymphocytic and histiocytic spongiosis (Fig. 6). These findings were consistent with nummular dermatitis.

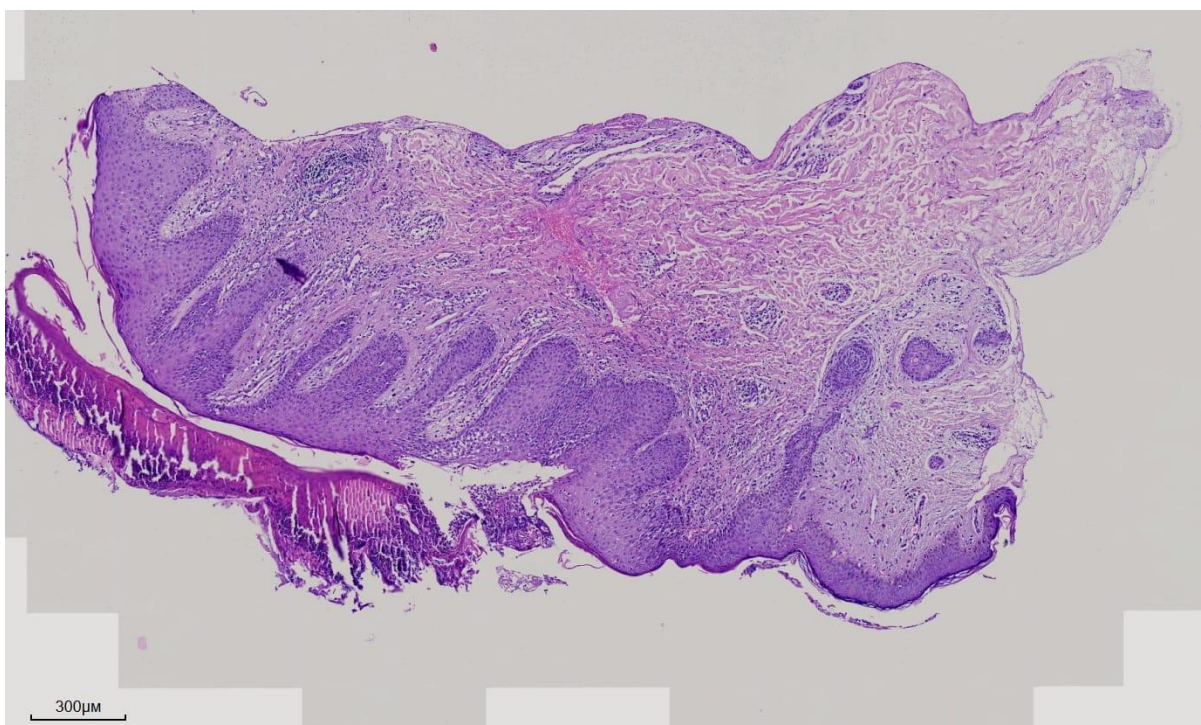


Fig. 4. Excoriation, hyperkeratosis, and acanthosis are observed in the epidermis (H&E, $\times 40$).

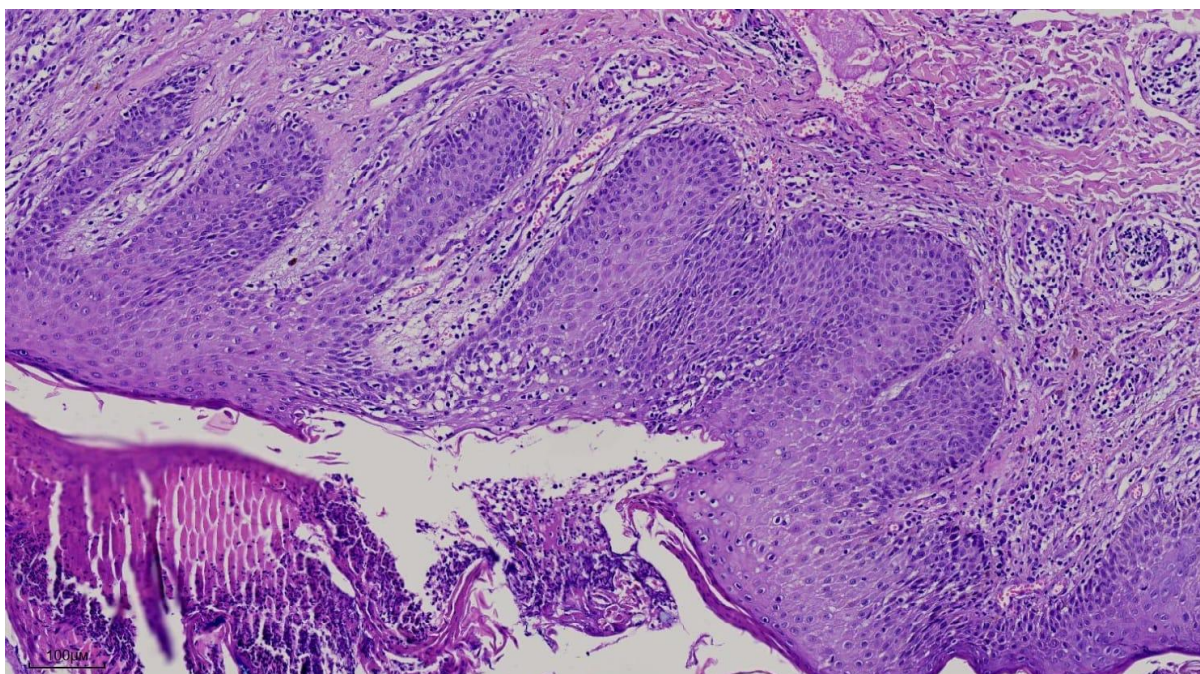


Fig. 5. In the dermis, capillary proliferation, chronic inflammation and superficial fibroplasia are seen (H&E, $\times 100$).

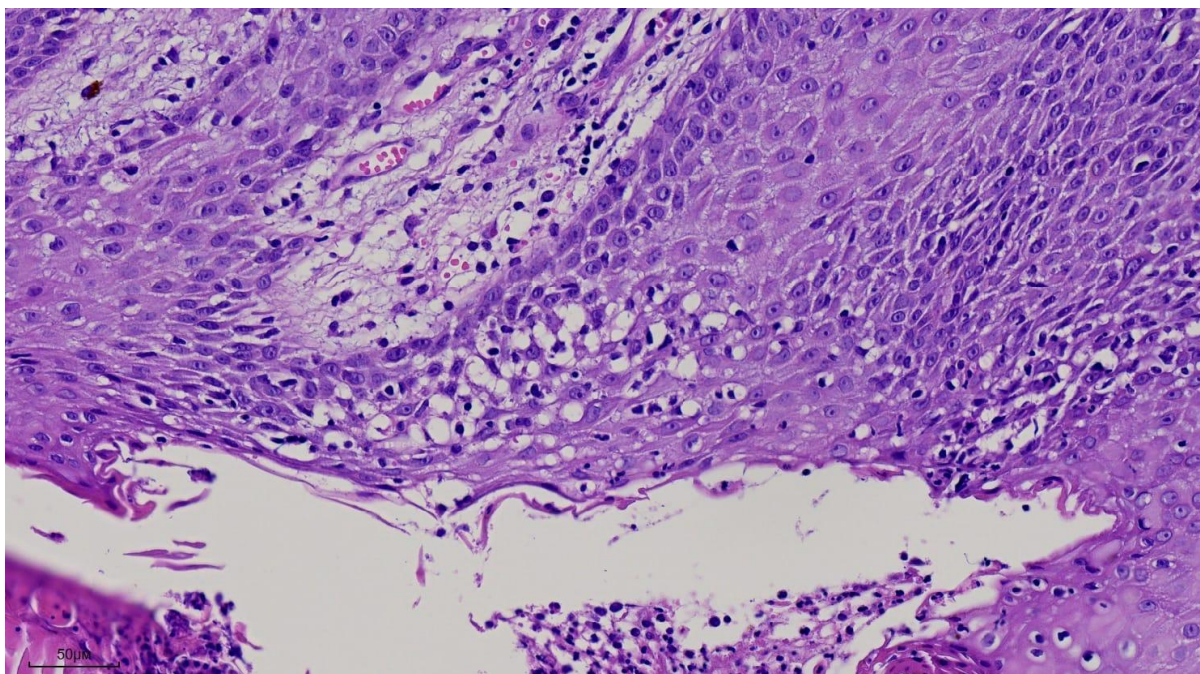


Fig. 6. On high-power examination, lymphocytic and histiocytic spongiosis is seen (H&E, $\times 200$).

DISCUSSION

Paclitaxel is a taxane chemotherapeutic agent widely used in the treatment of various solid tumors, particularly breast cancer. A range of cutaneous adverse effects has been reported in association with taxanes, including maculopapular eruptions, hand-foot syndrome, photosensitivity, various inflammatory dermatoses, and, less commonly, eczematous reactions. The pathogenesis of these reactions is thought to involve direct cytotoxic effects, keratinocyte apoptosis, and immune-mediated inflammatory mechanisms. In this context, paclitaxel-induced eczematous reactions may be associated with

keratinocyte damage and a subsequent immune response.^[3-5]

In the literature, certain systemic agents such as interferon, ribavirin, and isotretinoin have been reported to be associated with the development of nummular dermatitis.^[7,8] Although various forms of eczematous dermatitis related to taxane therapy have been described, to the best of our knowledge, no cases of paclitaxel-associated dermatitis presenting specifically as nummular dermatitis have been previously reported.^[5,6]

In the present case, sharply demarcated, erythematous, annular plaques that developed following paclitaxel therapy were found to be clinically and histopathologically consistent with nummular dermatitis. The rapid response of the lesions to systemic and topical corticosteroid therapy supports the likelihood of a drug-induced eczematous reaction. Furthermore, the marked regression of lesions despite the continuation of paclitaxel therapy suggests that this reaction can be effectively controlled with appropriate dermatologic management without interruption of oncologic treatment. It remains unclear whether this presentation represents true nummular dermatitis or a drug-induced nummular dermatitis-like reaction; however, the clinical and histopathological findings suggest a considerable overlap between these entities.

CONCLUSION

Drug-induced cutaneous reactions should be considered in the differential diagnosis of newly developed eczematous eruptions in patients undergoing chemotherapy. Early recognition and appropriate management are essential to prevent unnecessary treatment modifications and interruption of oncologic therapy. This case highlights that, although rare, nummular dermatitis-like eczematous reactions may occur during paclitaxel therapy and can be successfully managed without discontinuation of chemotherapy.

INFORMED CONSENT

Written informed consent was obtained from the patient for publication of this case and accompanying images.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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