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Maculopapular drug eruption with histopathological features of psoriasiform drug eruption in a patient with psoriasis vulgaris: a case report

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ABSTRACT

Maculopapular drug eruption in patient with psoriasis are rarely reported and require close monitoring during oral corticosteroid therapy due to the potential risk of flare following dose reduction or discontinuation. A 47-yo male with a history of psoriasis vulgaris on cyclosporine therapy developed erythematous patches with scaling following the administration of amoxicillin, mefenamic acid, and antitetanus injection after a nail puncture injury. Vital signs were within normal limits. Dermatological examination revealed multiple well-demarcated erythematous macules, patches, and papules with geographic patterns measuring 0.6×0.9 cm to 2.5×4 cm, some confluent, accompanied by white scales and desquamation. Histopathological findings were consistent with psoriasiform drug eruption. The Naranjo score for amoxicillin was 4, showed a possible correlation. A diagnosis of maculopapular drug eruption suspected to be induced by amoxicillin was established. Clinical improvement observed following the administration of oral corticosteroids, cyclosporine, antihistamines, and emollients. The diagnosis of maculopapular drug eruption requires correlation of rash onset and drug initiation as well as monitoring of symptom resolution after drug discontinuation the suspected drug. Histopathological examination may support the diagnosis, with the presence of eosinophils serving as an indicator of drug-induced etiology. Management of maculopapular drug eruption in patients with psoriasis includes withdrawal of the suspected causative agent, symptomatic therapy, systemic corticosteroids, and immunosuppressive treatment as indicated.

ABSTRAK

Erupsi obat makulopapular pada pasien dengan psoriasis jarang dilaporkan dan memerlukan pemantauan ketat selama terapi kortikosteroid oral karena adanya potensi risiko kekambuhan psoriasis setelah penurunan dosis atau penghentian obat. Seorang laki-laki berusia 47 tahun dengan riwayat psoriasis vulgaris yang menjalani terapi siklosporin mengalami bercak eritematosa disertai skuama setelah pemberian amoksisilin, asam mefenamat, dan suntikan antitetanus akibat cedera tertusuk paku. Tanda-tanda vital berada dalam batas normal. Pemeriksaan dermatologis menunjukkan adanya makula, *patch*, dan papula eritematosa yang berbatas tegas dengan pola geografis berukuran antara 0,6 × 0,9 cm hingga 2,5 × 4 cm, sebagian konfluen, disertai skuama putih dan deskuamasi. Hasil pemeriksaan histopatologi konsisten dengan gambaran erupsi obat psoriasiform. Skor Naranjo untuk amoksisilin adalah 4, menunjukkan adanya kemungkinan hubungan kausal. Diagnosis erupsi obat makulopapular yang diduga diinduksi oleh amoksisilin kemudian ditegakkan. Perbaikan klinis diamati setelah pemberian kortikosteroid oral, siklosporin, antihistamin, dan emolien. Penegakan diagnosis erupsi obat makulopapular memerlukan korelasi antara waktu munculnya ruam dan inisiasi obat, serta pemantauan perbaikan gejala setelah penghentian obat yang dicurigai sebagai penyebab. Pemeriksaan histopatologi dapat mendukung diagnosis, dengan keberadaan eosinofil sebagai penanda etiologi yang diinduksi oleh obat. Penatalaksanaan erupsi obat makulopapular pada pasien dengan psoriasis meliputi penghentian obat penyebab yang dicurigai, terapi simptomatik, kortikosteroid sistemik, serta pemberian terapi imunosupresif bila diperlukan.

Keywords:
drug eruption;
maculopapular drug eruption;
psoriasiform;
Naranjo score

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INTRODUCTION

Maculopapular drug eruptions are the most common form of drug-induced hypersensitivity reactions. They are sometimes referred to as morbilliform or exanthematous drug eruptions. The prevalence varies widely, ranging from 30% and 95%. The most frequently implicated drugs include penicillin-class antibiotics, antihypertensive agents, and anticonvulsant medications. The incidence of maculopapular eruptions in patients with psoriasis has been rarely reported. The initial management of maculopapular drug eruptions involves discontinuation of the suspected etiologic agent. Administration of antihistamines and systemic corticosteroids are commonly used in the treatment of maculopapular drug eruptions. However, the administration of systemic corticosteroids in patients with psoriasis who develop maculopapular drug eruptions requires intense monitoring. Several studies have reported a risk of flare in psoriatic lesions following the corticosteroid use.[1-4]

In this case, we reported a patient with a maculopapular drug eruption with suspicion of amoxicillin induced drug eruption, with histopathological findings consistent with psoriasiform drug eruption in a patient with psoriasis vulgaris. This case is reported to highlight the diagnostic challenges encountered and the management approach.

CASE

A 47-yo male presented with chief complaint of erythematous patches accompanied by scaling on the body. Six days before admission, the patient had a nail puncture injury and had received treatment consisted of amoxicillin, mefenamic acid, and an antitetanus injection (Tetagam®). The patient had experienced fever within 12 hr after ingested the medication, followed by the appearance of erythematous patches on the body accompanied by scales. The patient continued the amoxicillin consumption for 5 d until came to our hospital due to worsening skin condition.

The patient had a medical history of psoriasis vulgaris, monitored almost every month, and got improvement. The patient had been given cyclosporine 100 mg tablet, which was being tapered gradually. He had a history of prior amoxicillin used, however he was not aware of any previous use of mefenamic acid. The patient never received an anti-tetanus injection (Tetagam®) before.

Dermatological examination of the anterior and posterior thoracoabdominal regions, as well as the upper and lower extremities on bilateral sides, revealed multiple well-demarcated erythematous macules and patches with a geographic pattern, sized 0.6 × 0.9 cm to 2.5 × 4 cm, with several discrete and confluent lesions, accompanied by white scales and desquamation. On the left foot, a well-demarcated, round erythematous papule with a diameter of 0.3 cm was observed (FIGURE 1.A-H). Dermoscopic examination revealed red dots, a pinkish background, and superficial white scales (FIGURE 2). Skin biopsies were performed at two sites. The sample was taken on the erythematous patch with desquamation on the abdomen and an erythematous papule on the left foot.

Laboratory examinations including complete blood count, renal function, and liver function tests were performed and were within normal limits. Histopathological examination revealed psoriasiform epidermal hyperplasia covered with parakeratotic keratin containing Munro's micro abscesses, endothelial swelling of the blood vessel walls, and elongated rete ridges. Perivascular inflammatory infiltrates composed of neutrophils, lymphocytes, eosinophils, and plasma cells were observed, consistent with psoriasiform drug eruption (FIGURE 3.A-B).

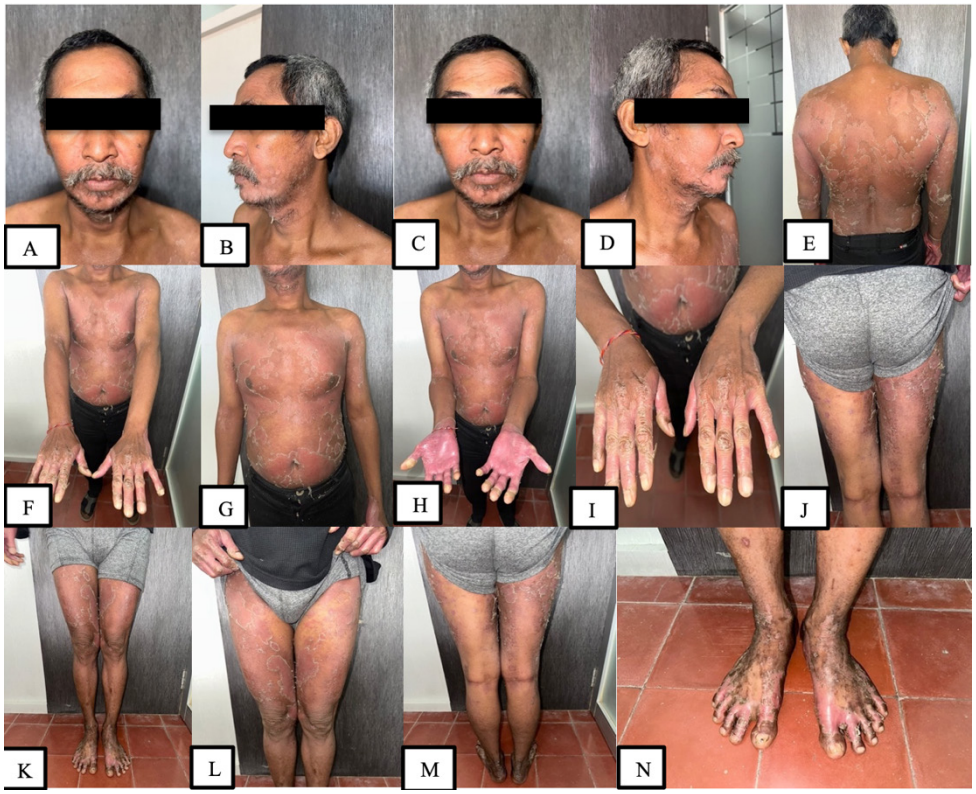

FIGURE 1. Multiple well-demarcated erythematous macules and patches with a geographic pattern, measuring 0.6 × 0.9 cm to 2.5 × 4 cm, were observed on the anterior and posterior thoracoabdominal regions, as well as on the upper and lower extremities bilaterally. Several discrete yet confluent lesions were noted, accompanied by white scales and desquamation (A-N).

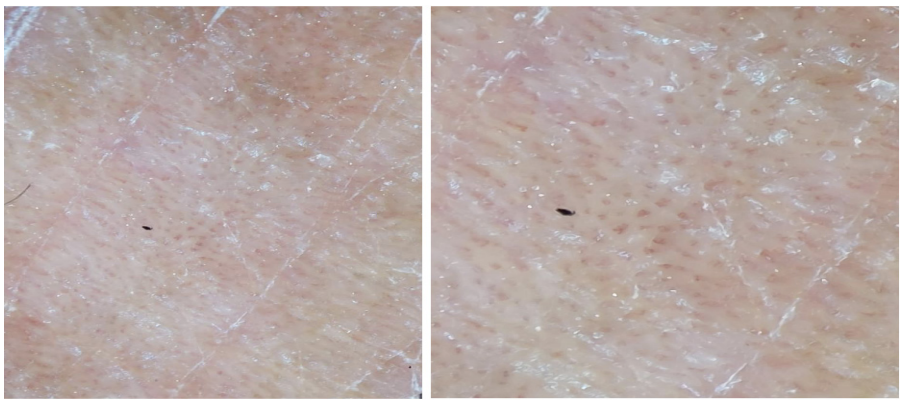

FIGURE 2. Dermoscopic examination of the lesion revealed red dots, white scales, and a pinkish background.

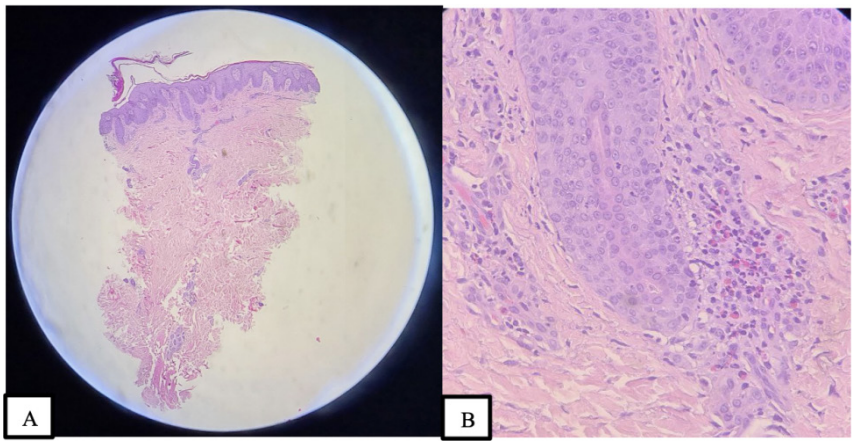

FIGURE 3. A. Histological section showing skin tissue composed of epidermis and dermis with adnexal structures. B. Perivascular inflammatory cell infiltrates consisting of lymphocytes accompanied by numerous eosinophils are observed in the perivascular area.

The Naranjo score assessment for amoxicillin and mefenamic acid indicated a "possible" correlation. The patient was diagnosed with maculopapular drug eruption suspected to be induced by amoxicillin. The treatment administered included oral methylprednisolone 8 mg every 12 hr (tapered gradually), oral cyclosporine 100 mg tablet every 12 hr, oral chlorpheniramine maleate 4 mg tablet once daily (as needed for pruritus), and topical moisturization with 10% urea cream applied every 12 hr to dry skin areas.

DISCUSSION

Maculopapular drug eruptions typically appear within one week after drug initiation and may continue to develop new lesions for 1–2 d after discontinuation of the offending agent. Resolution generally occurs within 7–14 d, accompanied by a change in skin coloration from pink to reddish-brown, usually followed by desquamation. Clinically, maculopapular drug eruptions manifest as erythematous macules or papules that initially appear on the trunk and subsequently spread symmetrically to the extremities, often becoming confluent. Most maculopapular drug eruptions are not life-threatening, with only 0.1% of cases categorized as life-threatening. Spontaneous resolution can occur within 1–2 wk following cessation of the causative drug. Maculopapular drug eruptions represent a type IVC hypersensitivity reaction in which T cells act as the primary effector cells.[1-3]

Risk factors for maculopapular drug eruptions include immunosuppressive therapy, concurrent infections, advanced age, and systemic autoimmune diseases. Regarding onset, lesions typically appear after the sensitization phase, occurring 5–14 d following drug exposure. However, in patients with a prior history of exposure to the same drug, skin lesions may develop as early as 6 hr after re-exposure.[1-3]

The diagnosis of maculopapular drug eruption requires correlation between the onset of the skin eruption and drug initiation, observation of symptom resolution following

discontinuation of the offending agent, and may be supported by histopathological examination.[3,5] Histopathological findings in maculopapular drug eruptions are often non-specific, typically described as superficial perivascular and interstitial lymphocytic infiltrates containing eosinophils. Histopathological examination may reveal mild lymphocytic infiltrates, necrotic keratinocytes, superficial perivascular and interstitial lymphocytic infiltrates with or without eosinophils and neutrophils, dilated blood vessels, hyperkeratosis, parakeratosis, spongiosis, acanthosis, and psoriasiform acanthosis. Several studies have reported that Munro's micro abscesses may be found not only in psoriasis but also in other conditions such as eczema in psoriatico (EIP), Netherton syndrome, and pityriasis lichenoides. Various literature sources indicate that the presence of eosinophils serves as an indicator of drug-related etiology and is a distinguishing feature of drug eruptions compared to other causes.[6-11]

The histopathological findings in this case were consistent with psoriasiform drug eruption. However, the diagnosis of maculopapular drug eruption was established based on the history of skin rash appearing after drug intake and the clinical presentation of multiple erythematous macules and patches, erythematous papules, and desquamation.

The method to determine the likelihood of a causative drug is by using the Naranjo score. Although drug rechallenge testing may assist in identifying the causative agent, this method is considered impractical and unethical due to its medical risks.[3,5] In this case, amoxicillin was suspected as the triggering agent since the eruption appeared within hours after drug intake, the only medication that patient took continuously, the patient had a history of prior amoxicillin use, and also the antibiotics are often reported as the causative agent. The patient's symptoms and complaints gradually improved following the discontinuation from the previous treatment. The Naranjo score evaluation for amoxicillin showed a score of 4, indicating a "possible" correlation. Mefenamic acid and Tetagam® were not suspected as causative agents, as there were no studies have reported these agents as trigger factor.

The management of maculopapular drug eruption in patients with psoriasis involves discontinuation of the offending agent, administration of symptomatic therapy, systemic corticosteroids, and immunosuppressive therapy for psoriasis, such as cyclosporine. Although systemic corticosteroids may be administered, regular monitoring is required due to the risk of flare upon dose reduction or discontinuation. Cyclosporine has been reported to be beneficial in cases of maculopapular drug eruption in patients with psoriasis, as it does not induce flare-ups.[4,12-15] In this case, treatment consisted of methylprednisolone 8 mg, cyclosporine 100 mg, chlorpheniramine maleate 4 mg, and 10% urea cream.

The prognosis was favorable, as the lesions improved following drug discontinuation and medical therapy. The patient was also educated regarding the importance of regular follow-up for monitoring the potential development of new lesions. Weekly evaluations were conducted for one month following the discontinuation of oral corticosteroids. On the follow up evaluation, no new lesions were observed.

CONCLUSION

We have reported a case of maculopapular drug eruption with psoriasiform histopathological features in a patient with psoriasis vulgaris. Diagnostic challenges were encountered in this case due to discrepancies

between the clinical findings and histopathological results. The histopathological examination is needed for this case but the history taking and clinical presentation define the final diagnosis. Management included elimination of the suspected causative agent, in this case was amoxicillin. The management followed by the administration of oral corticosteroids, cyclosporine, antihistamines, and moisturizers. The patient demonstrated a good therapeutic response, and during follow-up evaluations, no flare of psoriatic lesions was observed after discontinuation of oral corticosteroids.

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