CASE REPORT

Psoriasis induced by thalidomide in a patient with multiple myeloma

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SUMMARY

A 54-year-old woman developed psoriasis on the plantar surface of her feet after 2 weeks of thalidomide 100 mg daily for the treatment of multiple IgG myeloma. She did not have any previous history of psoriasis. Thalidomide was immediately stopped and topical treatment with calcipotriol ointment and β -methasone valerate was started. Psoriasis disappeared completely after 2 weeks of topical therapy. This is the first case of de novo psoriasis in a patient with multiple myeloma under treatment with thalidomide. Our observation provides further evidence of the potential paradoxical effect of thalidomide on tumour necrosis factor- α production.

BACKGROUND

Thalidomide was developed in the 1950s as a sedative drug and withdrawn in 1961 because of its teratogenic effects. Lately it has been rediscovered as an immune-modulatory and antiangiogenic drug. Thalidomide inhibits the production of tumour necrosis factor- α (TNF- α) by degradation of TNF- α mRNA.¹ TNF- α is an inflammatory cytokine involved in the pathogenesis of several inflammatory diseases including psoriasis. Interleukin (IL)-6 and IL-12, vascular endothelial growth factor (VEGF) and basic fibroblast growth factor (bFGF), which play a crucial role in psoriasis, are also inhibited by thalidomide.² This has been the scientific basis for the therapeutic use of thalidomide in patients with psoriasis.³ Furthermore, thalidomide has antitumour properties and its efficacy has been reported in patients with multiple myeloma, myelodysplastic syndrome and a variety of solid tumours.⁴ At present, the use of thalidomide for the treatment of psoriasis is limited to severe cases unresponsive to conventional therapies. Efficacy has been shown only for some patients and adverse reactions are very common.¹ Furthermore, cases of paradoxical exacerbation have been described.^{5,6}

CASE PRESENTATION

We report the first case of de novo psoriasis in a patient with multiple myeloma under treatment with thalidomide. Our patient is a 54-year-old woman without any personal and/or family history of psoriasis. After 2 weeks of thalidomide 100 mg daily for the treatment of multiple IgG myeloma, she developed psoriasis exclusively on the plantar surface of her feet (figure 1). There had been no evidence of symptomatic infections during the last month. She had been on daily therapy with furosemide, lansoprazole, valaciclovir and ASA for the past 6 months. Thalidomide was immediately

Figure 1 Plantar psoriasis induced by thalidomide.

Figure 2 Resolution of psoriasis after suspension of thalidomide and 2 weeks of topical treatment.

stopped and topical treatment with calcipotriol ointment and β -methasone valerate was started.

TREATMENT

β -Methasone valerate was applied once daily for 2 weeks, then once every other day for another

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2 weeks. Calcipotriol ointment was applied once daily for 8 weeks.

OUTCOME AND FOLLOW-UP

Psoriasis disappeared completely after 2 weeks of the aforementioned therapy (figure 2). After 3 months from the end of the topical treatment, there was no evidence of psoriasis.

DISCUSSION

Exacerbation of psoriasis by thalidomide has been reported in patients treated for Behçet's syndrome⁵ and erythema multiforme.⁶ Deterioration of psoriasis has also been observed in one of the seven patients included in a recent pilot study assessing the safety and efficacy of thalidomide in the treatment of psoriasis.¹ The mechanism by which these paradoxical reactions occur is not completely understood.¹ A bidirectional effect of thalidomide on proinflammatory cytokines, in particular TNF- α , with both enhancing and inhibitory effects on their production may be a possible explanation.¹ It has been suggested that thalidomide may have distinct and opposing effects on TNF- α by co-stimulation of both CD4 and CD8T cells.⁷ Increased TNF- α levels have been measured during treatment with thalidomide of patients with toxic epidermal necrolysis, scleroderma and oral aphthous ulcers.^{5 6} Lenalidomide is a small molecular analogue of thalidomide. A recent study has demonstrated that lenalido-

mide inhibits TNF- α production in the bone marrow environment, whereas stimulates its production in myeloma cells.⁸ Moreover, the role of TNF- α in the paradoxical onset of psoriasis is supported by several cases of psoriasiform eruptions induced by other anti-TNF- α agents, notably infliximab, etanercept and adalimumab.⁹

In our case the temporal association of thalidomide administration and psoriatic skin manifestations was consistent with the aetiological role of this drug in disease onset, although we cannot completely exclude that the development of psoriasis could have been a coincidence as the patient was not rechallenged with thalidomide.

Thalidomide seems to be a beneficial agent for treating a variety of refractory dermatological disorders; however, its ambiguous behaviour should always be considered in relation to its use in clinical dermatology.

Competing interests None.

Patient consent Obtained.

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Learning points

- To the best of our knowledge, this is the first case of de novo psoriasis in a patient with multiple myeloma under treatment with thalidomide.
- Our observation provides further evidence of the potential paradoxical effect of thalidomide on tumour necrosis factor- α production.
- The ambiguous behaviour of thalidomide should always be considered in relation to its use in clinical dermatology.

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