Response of superimposed linear psoriasis to ustekinumab: A case report

Sir,

Linear psoriasis is a rare form of psoriasis which has been reported to concur with plaque psoriasis but may be unmasked only after the effective treatment of plaque psoriasis on other body parts.[1,2] Most of the literature till now demonstrated that treatments effective for plaque psoriasis including adalimumab, infliximab, etanercept, methotrexate, dithranol and corticosteroids, only yielded poor to limited responses in linear psoriasis.[1-4] There is only one report in which radiation therapy combined with calcipotriol and corticosteroids was somewhat effective.[5]

Here we present a case in which linear psoriasis showed inadequate response to ustekinumab, an anti-interleukin-23 monoclonal antibody. A 26-year-old otherwise healthy man was diagnosed with plaque psoriasis, two years before his visit at our clinic. His previous regimen included oral methotrexate, oral acitretin, topical calcipotriol, topical calcitriol and topical clobetasol propionate. Nevertheless, the skin lesions continued to increase. At the age of 27, he noticed linear lesions developing on his right arm. On physical examination, he had multiple individual erythematous scaly plaques coalescing to form a linear pattern on his right upper arm, shoulder and back [Figure 1a and b] along with typical plaque psoriasis [Figure 1c]. Due to intolerance to other treatments, ustekinumab 45 mg was administered subcutaneously at weeks 0 and 4, followed by every 4 weeks. Over the treatment course of 18 doses, most lesions of plaque psoriasis showed a significant resolution, with psoriasis area and severity index (PASI) dropping from 14.3 to 3.2. However, linear psoriasis on the arm and back remained refractory to ustekinumab and was especially pruritic [Figure 2a-c]. Biopsies on the lesions from linear and plaque psoriasis were both compatible with the diagnoses of psoriasis. Acanthosis, elongation of rete ridges, hyperkeratosis, Munro's microabscesses and upper dermal lymphocytic and neutrophilic infiltration were observed in both lesions [Figure 3a and b].

Our report is the first to demonstrate the effects of ustekinumab in the treatment of linear psoriasis. Ustekinumab is an anti-interleukin-23 agent with superior efficacy compared to etanercept in a controlled trial.[6] Although ustekinumab is approved for the treatment of plaque psoriasis and psoriatic arthritis, currently there has been no report of its use in the treatment of linear psoriasis. Previous reports of anti-tumor necrosis factor-α agents for the treatment of linear psoriasis all failed to show adequate response. These agents include infliximab, etanercept and adalimumab.[1,7] The relatively inadequate treatment response of ustekinumab in linear psoriasis compared to plaque psoriasis

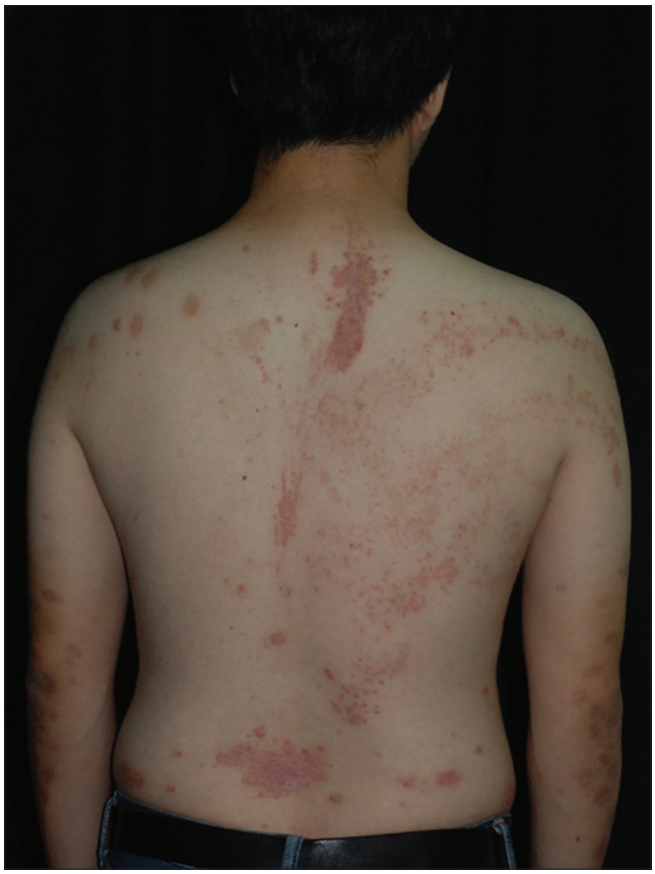

Figure 1a: Before the initiation of ustekinumab: Superimposed linear psoriasis on the back

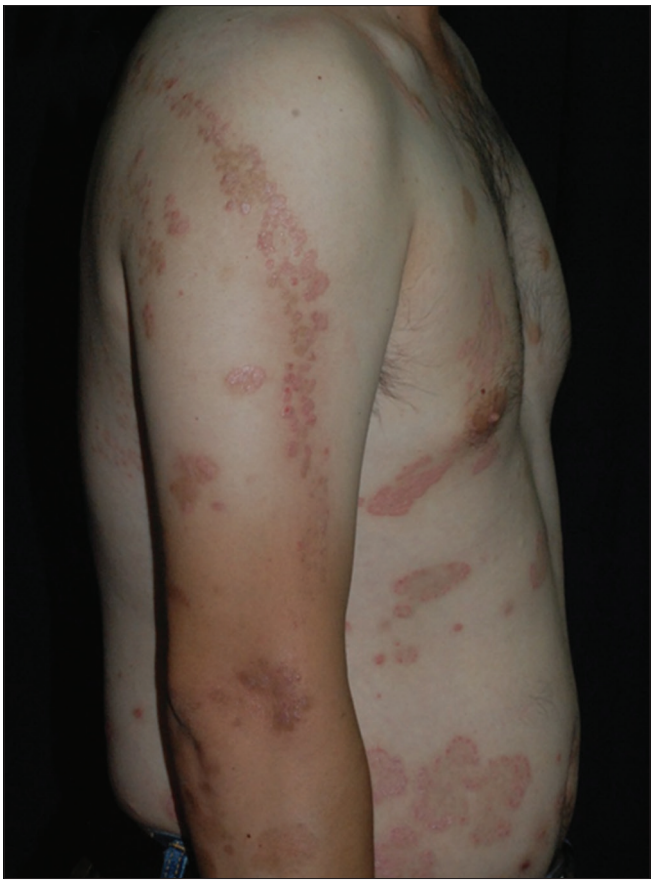

Figure 1b: Before the initiation of ustekinumab: Superimposed linear psoriasis on the right arm

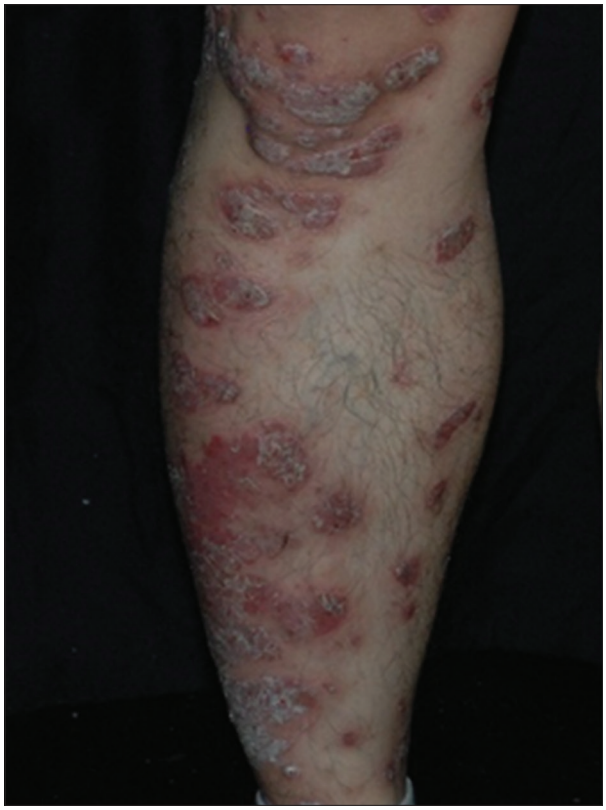

Figure 1c: Before the initiation of ustekinumab: Plaque psoriasis on the leg

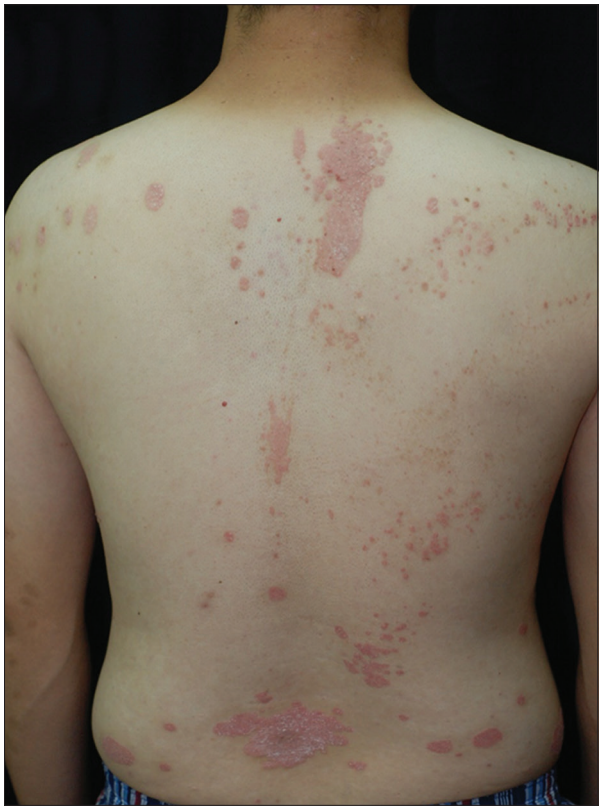

Figure 2a: Refractory lesions of linear psoriasis after ustekinumab: Persistent lesions of linear psoriasis on the back

underlines the importance of phenotyping for psoriasis to predict biologic responsiveness.[8] In addition, targeting other pathways may be of therapeutic potential for linear psoriasis.

The differential treatment responses are consistent with the hypothesis that linear psoriasis may be a special variant of psoriasis with a nevoid nature, which is distinct from plaque psoriasis. The exact nature of linear psoriasis is not known, but a postzygotic mutation has been proposed. Moreover, the age of onset of linear psoriasis is often delayed as in our case. However, in our patient, the onset of his linear psoriasis seemed to coevolve with his plaque psoriasis. The linear form became more prominent after the resolution of his plaque psoriasis. More studies are warranted to better understand the etiology as well as the treatment of linear psoriasis.

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Conflicts of interest

There are no conflicts of interest.

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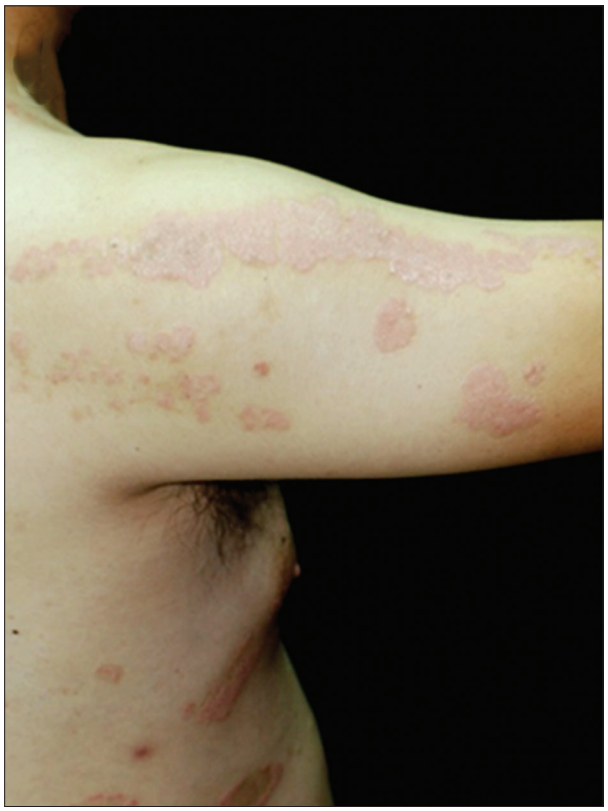

Figure 2b: Refractory lesions of linear psoriasis after ustekinumab: Persistent lesions of linear psoriasis on the right arm

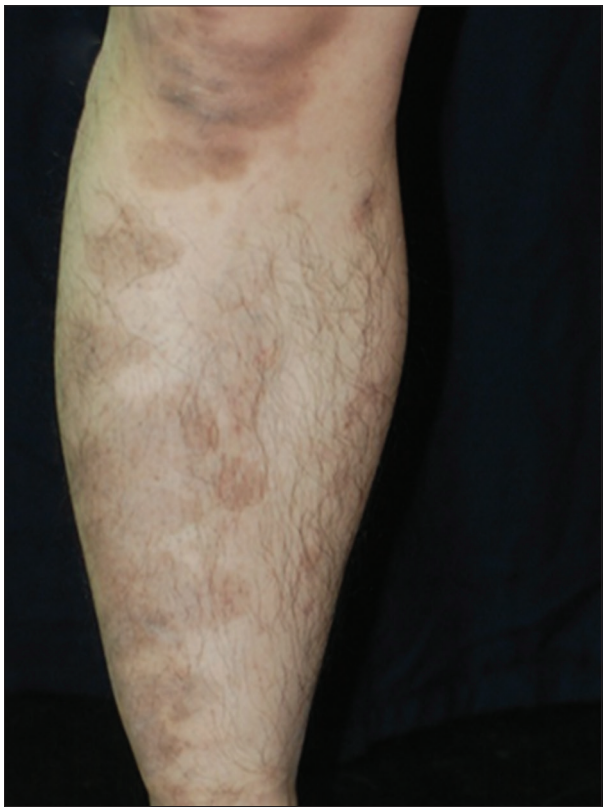

Figure 2c: Lesions of plaque psoriasis over the legs showing improvement after ustekinumab

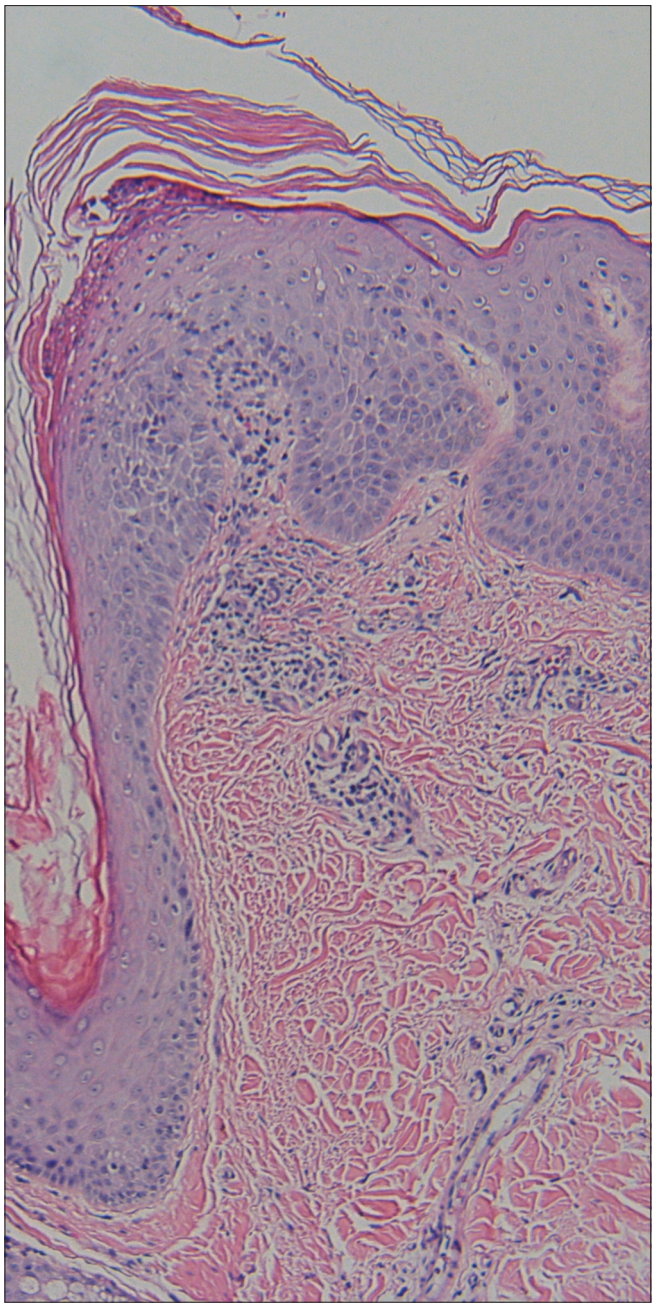

Figure 3a: Biopsy of linear psoriasis on the upper back showing hyperkeratosis, acanthosis and elongation of rete ridges (H and E, ×100)

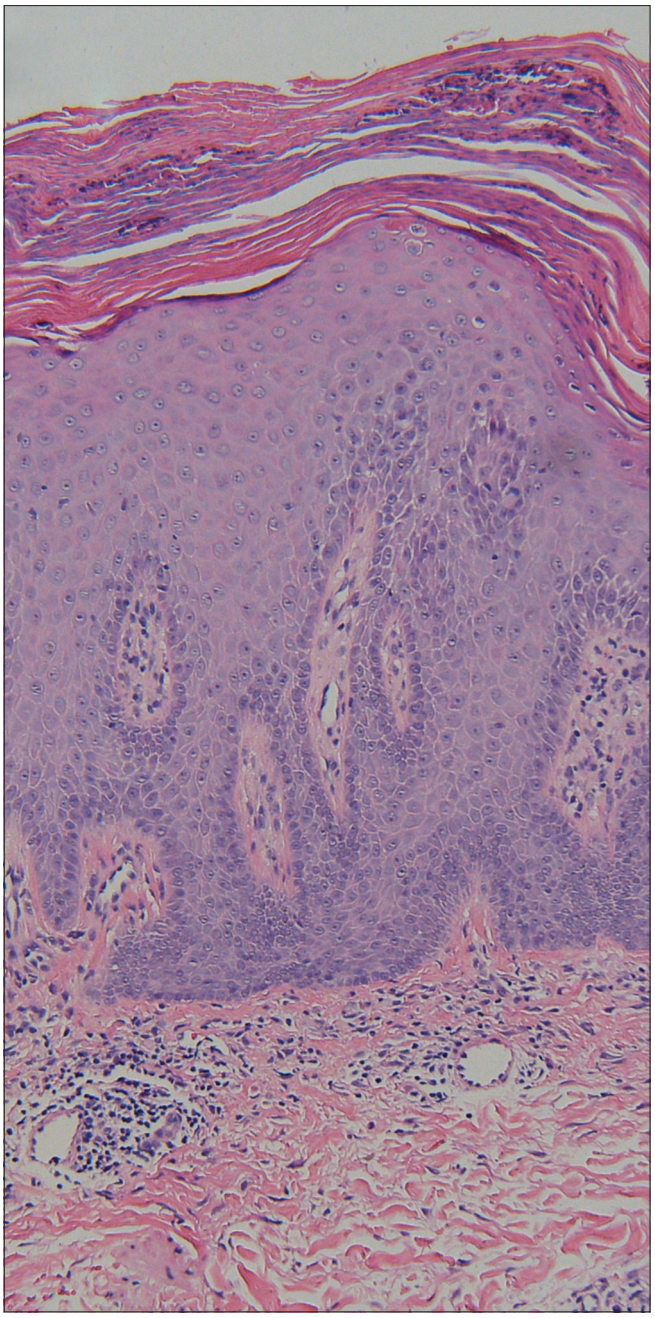

Figure 3b: Biopsy of plaque psoriasis on the abdomen showing parakeratosis, acanthosis, elongation of rete ridges, Munro's micrabscesses and upper dermal infiltrate with lymphocytes and neutrophils (H and E, ×100)

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