Letter to the Editor

To the Editor,

Trachyonychia, also known as 20-nail dystrophy or rough nails, is characterized by surface roughness and opacity of the nail due to extensive longitudinal ridging [1–3]. The condition may be idiopathic or associated with eczema, lichen planus, psoriasis, or alopecia areata [1–3]. Although spontaneous resolution can be expected in trachyonychia, aggressive treatments are necessary in severe cases [1–3]. Here, we report a case of spongiotic trachyonychia successfully treated with topical corticosteroids using the paper tape occlusion method.

A 45-year-old man presented with dystrophic changes of all fingernails and toenails that had started 2 years earlier. He was otherwise healthy and had no medical history of significant skin diseases, including psoriasis, lichen planus, or alopecia areata. Careful examination revealed surface roughness, extensive ridging, and opaque thickening of the nails (fig. 1). Moreover, the proximal nail folds, where he had been complaining of severe itching, were reddish and swollen. Within 6 months, the ridging gradually became less conspicuous.

Key Words
Trachyonychia · Topical corticosteroids · Paper tape occlusion method · Nail matrix · Spongiosis

Fig. 1. Initially, fingernails exhibited roughness and extensive ridging, and the proximal nail folds were reddish and swollen with severe itching. Within 6 months, ridging gradually became less conspicuous.
itching, were reddish, swollen, and lacking in cuticles. Direct mycological examination and culture of nail samples yielded negative results. Laboratory tests showed a slightly increased level of serum immunoglobulin E (180 IU/ml; normal, 0–170 IU/ml) and mild eosinophilia (7.1%; normal, 1–6%). Biopsy from the nail matrix of an affected digit revealed emergence of the granular layer and marked spongiosis in the epidermis as well as perivascular mononuclear cell infiltration in the dermis (fig. 2). Based on the clinical and histological findings, the patient was diagnosed with spongiotic trachyonychia. Since the nail matrix was considered to be the primary site of inflammation causing the dystrophic nail changes, treatment with topical corticosteroids was initiated using the paper tape occlusion method. Specifically, clobetasol propionate ointment was initially applied to the proximal nail fold, which was then covered with the paper tape (3M® Micropore®, USA) (fig. 3). The paper tape was usually changed every night and left attached at least while sleeping, and even longer if possible. Remarkably, long-standing severe itch and erythematous swelling of the proximal nail fold both started to improve as early as within a month without relapses (fig. 1). Six months after the paper tape occlusion method had been started, nail morphology showed substantial improvement with the ridging less conspicuous (fig. 1). Judging from the immediate improvement of the refractory symptoms after the treatment, it is reasonable that the paper tape occlusion method was practically effective in our case.

It has been proposed that trachyonychia represents a subgroup of endogenous eczema with a predilection for the nail matrix, although it may also result from other known dermatological disorders, such as lichen planus [4, 5]. Indeed, marked spongiotic inflammation of the nail matrix was the primary histological change in our case, as previously indicated in cases of spongiotic trachyonychia [6].

It is known that spontaneous resolution can be expected in trachyonychia, but interventions are necessary especially in severe cases [1–3]. Several choices of treatment for trachyonychia have been reported, including topical corticosteroids, intralesional or systemic steroids, and topical psoralen ultraviolet A [1–3]. Among them, treatment with topical steroids is preferable, because it is safe, painless, effective, convenient, and sustainable. It is also very useful for the treatment of children, considering the painless and comfortable nature of the therapy. However, to enhance its therapeutic effects, there are a few things to consider. First of all, steroids need to be applied to the proximal nail fold, because the underlying nail matrix is the primary site of inflammation in trachyonychia. Moreover, since the nail matrix is deeply located and distant from the proximal nail fold where steroids are applied, efficient permeation of potent steroids should be essential for sufficient anti-inflammatory effects. In that respect, the paper tape occlusion method is highly encouraged as it is expected to facilitate permeation of topically applied steroids around the nail matrix. While the polyvinyl chloride plastic tape seems to be more commonly used for the occlusion method, the paper tape is recommended because it has hypoallergenic and highly breathable properties which enable its safe and comfortable use over a long period of time.

Lastly, if there is concern about local cutaneous side effects due to long-term use of potent steroids, especially under the occlusion method, steroids can be discontinued and superseded by tacrolimus.
Statement of Ethics
The patient’s consent has been obtained.

Disclosure Statement
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References