Twenty-Nail Dystrophy: Report of Two Cases and Review of the Literature

TWENTY-NAIL DYSTROPHY: İKİ OLGU SUNUMU VE LİTERATÜRÜN GÖZDEN GEÇİRİLMESİ

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Abstract

Twenty- nail dystrophy (TND) is a rare disorder that is most commonly found in childhood. It is an acquired, idiopathic nail dystrophy in which all twenty nails are uniformly and simultaneously affected with excess ridging and loss of nail luster. It occurs as an isolated nail abnormality as well as a common manifestation of various dermatoses affecting the nail unit. In this article two case reports of TND in a 10-year-old girl and 32-year- man are presented. The nail examination of both patients revealed thin, rough, opaque, lusterless nail plates with longitudinal ridging involving all the fingers and toes. There was no evidence of any other dermatological and systemic disease in both cases.

Key Words: Nail disease, twenty-nail dystrophy

Özet

Twenty-nail dystrophy (TND) en sık çocukluk çağında rastlanan nadir bir bozukluktur. Yirmi tırnağın aynı anda artmış çizgilenme ve tırnak parlaklığının kaybı şeklinde etkilendiği kazanılmış, idiopatik tırnak hastalığıdır. Yalnızca tırnak bozukluğu şeklinde görülebileceği gibi tırnak ünitesini etkileyen çeşitli dermatozların bir bulgusu olarak da ortaya çıkabilir. Bu makalede 10 yaşında kız çocuk ve 32 yaşında erkek hasta olmak üzere iki TND vakası sunulmaktadır. Başka bir dermatolojik ve sistemik hastalık bulgusu olmayan her iki hastanın tırnaklarının incelenmesinde bütün el ve ayak tırnaklarının tutulduğu, longitudinal çizgilenme olan ince, kaba, mat tırnaklar saptandı.

Anahtar Kelimeler: Tırnak hastalığı, twenty-nail dystrophy

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The term 'Twenty-nail dystrophy (TND)' was introduced by Samman in 1965 and further emphasized by Hazelrigg et al. in 1977 to describe a morphological entity presenting a characteristic pattern of nail changes.[1,2] It is a rare, acquired, idiopathic nail dystrophy in which all twenty nails are uniformly and simultaneously affected with excess ridging and loss of nail luster. TND is considered to be a self-limited abnormality that resolves slowly with age, especially in children.[3,4] It may occur either as an isolated nail abnormality or may be associated with dermatoses such as lichen planus, alopecia areata, eczematous changes, IgA deficiency, ichtyosis vulgaris, primary biliary cirrhosis, pemphigus, vitiligo, onychomycosis and incontinentia pigmenti.[5-18] We report two patients with TND and review the previously reported articles.

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Case Reports

Case 1

A 10-year-old girl presented with dystrophy of all twenty nails of one year duration. The changes were first noted in the finger nails followed by similar involv ement of the toe nails a year later. The condition was completely asymptomatic. She had been treated with topical and systemic antifungals for several months with no improvement. All laboratory values were normal. Potassium hydroxide examination and culture of the nail was nega-

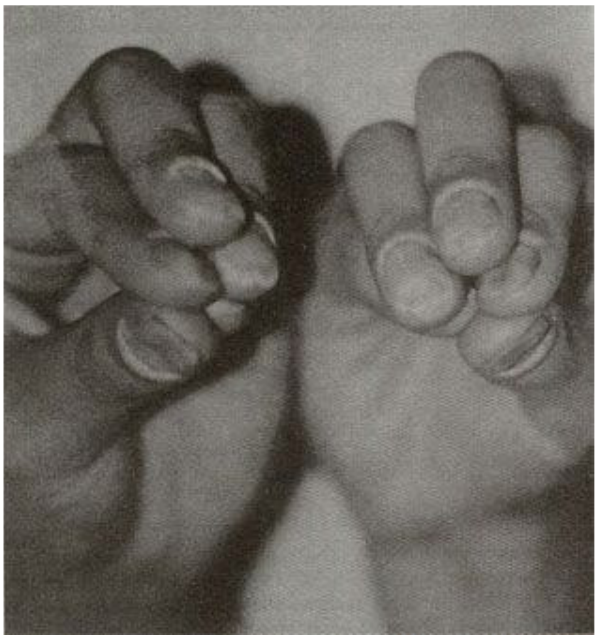

Figure 1. Clinical appearance of Case 1.

tive for fungus. There was no history suggestive of atopy, alopecia areata, psoriasis, lichen planus, drug allergy or any systemic illness. Family history was not contributory.

The patient was in good health. Nail examination revealed thin, rough, opaque, lusterless nail plates with longitudinal ridging involving all the fingers (Figure 1) and toes (Figure 2). There was no evidence of any other dermatological or systemic disease.

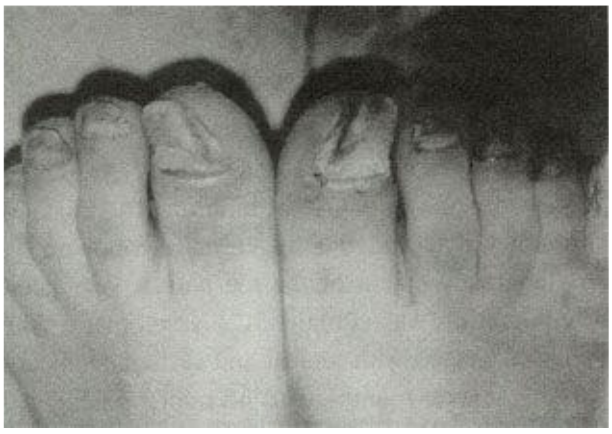

Figure 2. Rough, opaque, lusterless toenails of Case 1.

Case 2

A 32-year-old man presented with dystrophy of all twenty nails of 10-year duration. The changes had begun at the age of 22 and first noticed in the fingernails, followed six months later by similar changes in the toe nails. He had used many systemic antifungals with no improvement. All the laboratory studies were within normal limits. Potassium hydroxide preperations and fungal cultures from scrapings of several involved nails were negative for pathogens. Personal and family histories for any other cutaneous or systemic diseases were unremarkable.

Dermatological examination revealed all twenty nails to be rough, thin, lusterless with longitudinal ridging involving all the fingers (Figure 3) and toes (Figure 4). The rest of the cutaneous and systemic examination was normal.

Discussion

TND is a rare disorder that is most commonly found in children but has also been reported in adults. Typical changes include thinning, roughness, excessive longitudinal ridging, multiple pits and loss of lustre of all or almost all nails.[18,19] Excess longitudinal ridging is the hallmark of this condition.[17]

TND is a descriptive term and do not suggest any diagnosis or etiology. It occurs as an isolated nail abnormality as well as a common manifestation of various dermatoses affecting the nail

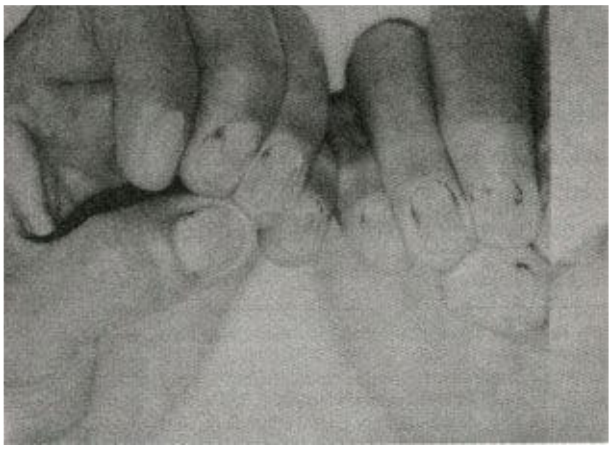

Figure 3. Fingernails of Case 2.

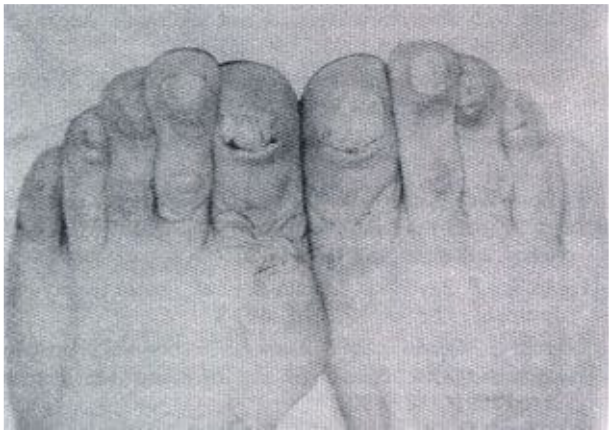

Figure 4. Toenails of Case 2.

unit.[20,21] In both of our cases personal and family histories for any other cutaneous or systemic diseases were unremarkable. Also the rest of the cutaneous and systemic examination was normal.

TND is known to affect both the genders, with a peak incidence in younger ages, although a slight predilection in males was seen in a study.[21] The onset is usually between 18 months to 12 years of age, although sporadic cases have also been reported in adults.[16] Our first case was a 10- year-old girl with dystrophy of all twenty nails of one year duration and the second case was a 32- year-old man with dystrophy of all twenty nails of 10-year duration. TND is known to undergo spontaneous remission, especially in children.[3,4,21] As our second case presented with TND of 10 year duration, it may be proposed that TND may not resolve spontaneously in adults.

Clinical appearance might vary in the degree of the severity of the nail dystrophy.[22] Baran has suggested that the clinical appearances could be classified into two groups.[23] In the first type, vertical striated sandpapered nails are predominantly seen on all fingers. In the second type, numerous shiny, opalescent pits, sometimes lined transversely, are observed. Most of the previously reported cases have been of the first type. In both of our cases; nail examination revealed thin, opaque, rough, lusterless nail plates with longitudinal ridging involving all the fingers and toes. There was no pitting and pterygium formation. Due to these findings, our cases were of the first type.

Although very few published reports have included histological findings, Tosti et al. reported the clinical features and pathological findings of 23 patients with TND/idiopathic trachyonychia.[3] More than 80% of the nail biopsy specimens revealed focal spongiotic changes, and the rest of the cases showed psoriasiform or lichen-planus-compatible features. Grover et al. carried out a study to evaluate the clinical and histopathologic profile of TND and the utility of longitudinal nail biopsy (LNB).[21] They mention that LNB cannot be suggested in the routine evaluation for the practical management of trachyonychia because of the significant scarring associated with this procedure. The other significant side effects of LNB were noted in some patients in the form of secondary infection, reduction in total nail width and acquired malalignment. However, it does have a place in few troublesome cases in which the clinical diagnosis is otherwise obscure. As the clinical diagnosis of our cases was obvious and there are many side effects of the procedure, LNB was not performed.

The true etiology of the entity known as TND has been the subject of much recent debate. Such dystrophic changes may be related to known dermatoses such as lichen planus, alopecia areata or psoriasis. Congenital, familial and hereditary cases have occurred in both children and adults and identical nail changes have been described in association with ichtyosis vulgaris, atopic dermatitis and selective IgA deficiency. The term TND has thus become confusing.[6] On the basis of the histologic appearances of marked spongiosis and acanthosis in the nail matrix, TND may represent a clinical variant of endogenous eczema.[4] Another point of view is that TND may be secondary to an immunologic abnormality.[4,12]

As the etiology and pathogenesis of TND remains unclear, there has not been a successful treatment yet.[7,22,24] TND is believed to be self-limiting. However, various treatment modalities have been tried, including topical steroids alone or in combination with salicylic acid and tretinoin,

intralesional and systemic steroids, topical 5-fluorouracil, PUVA therapy, and griseofulvin with variable success.[2,3] Intramatrix injections of triamcinolone into the proximal and lateral nail folds were administerd with considerable improvement in a 14-year-old girl presented with TND.[16] Halkier-Sorensen et al. described a case of TND treated with topical PUVA.[24] They observed that regression occurs slowly and a maintenance dose is necessary for a long time to prevent recurrence. These treatment options were discussed with our patients, and since a satisfactory treatment is not available, the patients were dismissed with suggestions.

As TND is a rare disorder, we found it worthwhile to report two cases of TND in a child and an adult.

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