Case Report

DOI: 10.17354/ijss/2015/197

Twenty Nail Dystrophy in 12-year-old Male Child: A Case Report

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Abstract

Twenty nail dystrophy of childhood or trachyonychia is a rare acquired disorder. It is usually idiopathic and can be associated with other diseases. It is characterized by excessive longitudinal ridging, brittleness and thickening of nail plates involving 1-20 nails. We report an interesting case of a 12-year-old adolescent boy who presented to us with rough, opaque and lusterless nails, without any systemic involvement. Histopathological examination revealed the typical spongiosis described with this disease. This report also highlights the rationale for a nail biopsy and challenges faced for investigation of the underlying cause. A conservative approach was successful in our patient.

Key words: Dystrophic nails, Longitudinal ridging, Nail biopsy, Trachyonychia, Twenty nail dystrophy

INTRODUCTION

Trachyonychia was first described by Alkicwicz in 1950 and was termed twenty nail dystrophy (TND) of childhood in 1977 by Hazelrigg *et al.*[1] The term trachyonychia is derived from the Greek word trakos, which means rough, to describe rough nail seen in this condition.[2] In few patients the abnormality is less severe and only characterized by numerous, small superficial pits, which gives a shiny appearance to the surface of the nail (shiny trachyonychia).[3] When the trachyonychia involves all the 20 nails, it is termed as TND.[3] It has an insidious onset commonly affecting males with a peak age of 3-12 years.[2] TND is usually associated with several diseases such as vitiligo, atopic dermatitis, alopecia areata, lichen planus and psoriasis.[4]

Trachyonychia can run in families in an autosomal dominant fashion.[5] Isolated idiopathic trachyonychia is much less common hence only few case are reported in the literature.[6] Determining the cause of trachyonychia is quite challenging as most of the times the diagnosis is straightforward, it could be perplexing at times as, in this case, where nail biopsy became mandatory to know the underlying cause and confirm the diagnosis.

Access this article online

www.ijss-sn.com

Month of Submission : 02-2015
Month of Peer Review : 03-2015
Month of Acceptance : 03-2015
Month of Publishing : 04-2015

CASE REPORT

A 12-year-old boy presented to our outpatient clinic with discoloration of all the 20 nails since 4 months. The child was apparently asymptomatic till 6 months back, when he first noticed changes in the fingernails followed by similar involvement of the toenails.

There was no history of any trauma, rashes over the body, drug ingestion or previous blood transfusion. There was no family history of any allergies or autoimmune disorder. A detailed clinical examination was done. General examination revealed no evidence of any neurocutaneous markers, skin lesions or mucosal involvement. Systemic examination was unremarkable. Nail examination was quite conspicuous in revealing longitudinal ridging, lack of luster and muddy grayish white discoloration involving all the nails (Figure 1a and b). The child was thoroughly evaluated where complete blood picture and urine examination was normal. Potassium hydroxide preparation and nail culture for fungal growth were negative.

A biopsy specimen of the nail matrix was obtained and sent for histopathological examination, which showed

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focal spongiotic changes in the nail matrix reflecting the clinical appearance of nail plate surface (Figure 2). After the diagnosis was established the child along with his parents was counseled, reassured and explained about the benign nature of the condition and its self-limiting course. He was started on vitamin supplements, biotin and a moisturizer was prescribed. The child was advised to follow-up regularly at the outpatient clinic.

DISCUSSION

The idiopathic type of TND begins insidiously in early childhood. This is usually a self-limiting condition that usually resolve slowly as the child grows. Familial types are usually more severe and dystrophic changes present at birth and usually are persistent.[7] Our patient is a classic example of idiopathic TND. In our patients, there was involvement of all the 20 nails but in few patients one or a few may be spared.

Early diagnosis and treatment are essential to avoid permanent scarring of nails associated with some conditions like lichen planus.

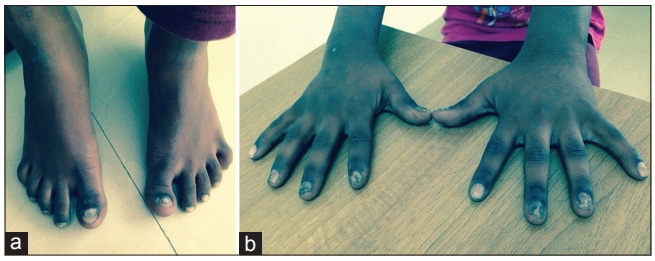

Figure 1: (a and b) The dystrophic nails involving all the 20 nails

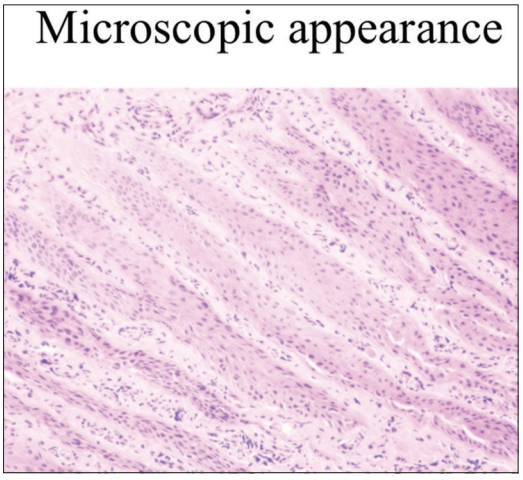

Figure 2: The spongiotic changes in the nail demonstrated on nail biopsy

Treatment of trachyonychia is unsatisfactory and usually unrewarding. Various modalities of treatment have been tried *viz.*, griseofulvin, systemic, topical and intralesional corticosteroids,[8] but they have been found largely unsuccessful. In a single case oral methyl prednisolone was found to be successful.[9]

A comprehensive review of the literature reveals that there is no single evidence based treatment for trachyonychia. It resolves spontaneously as it is self-limiting and treatment should be given only when deemed essential. Vitamin supplements: Biotin, iron and zinc are helpful and the beneficial effects usually start after 2-3 months of supplementation.[10] Moisturizers help in providing keratin to hold each nail together.

CONCLUSION

Trachyonychia is a chronic clinical condition that may present as an idiopathic finding or in association with other conditions. While the diagnosis can most often be made based on distinguishing clinical symptoms, it could be challenging at times and calls for a need to do a nail biopsy to establish a prompt diagnosis. However, there is no specific therapy for TND and in most cases nail signs improve spontaneously and reassurance to the patient and family remains the mainstay of management.

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How to cite this article: Naseem A, Rao GN. Twenty Nail Dystrophy in 12-year-old Male Child: A Case Report. Int J Sci Stud 2015;3(1):234-235.

Source of Support: Nil, **Conflict of Interest:** None declared.