

# A Rare Case Report: Twenty Nail Dystrophy in Child

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**Keywords:** Trachyonychia, nail dystrophy.

**Abstract:** Twenty nail dystrophy (trachyonychia) is a nail sign that can be idiopathic but likely reflects alopecia areata, psoriasis, dermatitis, or lichen planus of the nail. Characterized by nail roughness due to excessive longitudinal ridging (sandpaper nails) and more common in children.(1) A 6-years old girls presented to the Sutomo General Hospital outpatient clinic complaint of yellowish discoloration and roughness of all his fingernails and toenails, starting with the thumbs and simultaneously since four years earlier. There were history of atopic in her family. This report highlights the challenges faces for investigation of the underlying cause.

## 1 INTRODUCTION

Twenty nail dystrophy also known as trachyonychia was first mentioned by Hazelrigg et al. in 1977 because it was initially described as uniformly affecting all twenty nail and toenails (Tongdee et al., anon). However since not all 20 nails are always affected in this condition, it has since been termed “trachyonychia” (Alkiewicz, 1950). Trachyonychia is a disorder of the nail unit that most commonly presents with rough, longitudinally ridged nails (opaque trachyonychia) or less frequently, uniform, opalescent nails with pits (shiny trachyonychia). The term trachyonychia refers to ‘rough nails.’ The appearance has also been likened to the nails being rubbed with sandpaper, and has therefore also been referred to colloquially as ‘sandpapered nails.’

Trachyonychia can occur in patients of all ages, though children tend to be more frequently affected. Girls and boys are affected equally (Karakayali et al., 1999). The condition can evolve idiopathically as well as in association with a wide variety of dermatologic and nondermatologic diseases. Severity of disease may vary between nails, but generally, the nails evolve over time into a muddy, white-grayish discoloration.(Tongdee et al., anon).

## 2 CASE

A 6-years old girls presented to the Sutomo General Hospital outpatient clinic complaint of yellowish discoloration and roughness of all his fingernails and toenails, starting with the thumbs and simultaneously since four years earlier. At the time of presentation, the nails were dull, yellow, lusterless, and opaque with excessive longitudinal ridging and had a rough surface. She also complaint about the dry skin but no skin lesions elsewhere on the body. Potassium hydroxide smear and fungal culture of the nail scrapping were negative. A biopsy from nail clipping of the right finger was taken. It showed stain positive for spores. Other blood investigation showed high IgE serum (1,872 IU/mL).

## 3 DISCUSSION

Trachyonychia is a disorder of the nail unit that most commonly presents with rough, longitudinally ridged nails (opaque trachyonychia) or less frequently, uniform, opalescent nails with pits (shiny trachyonychia). The term trachyonychia refers to ‘rough nails.’ The appearance has also been likened to the nails being rubbed with sandpaper, and has therefore also been referred to colloquially as ‘sandpapered nails.’ It can involve from one nail up to all twenty nails (Haber et al., 2016).

In particular, onychomycosis may appear very similar to trachyonychia, so early appropriate evaluation for that disorder is needed. There are two different subtypes of trachyonychia categorized by their clinical appearance and severity (Baran, 1981). Opaque trachyonychia, the more severe type, characterized by rough nails that appear to have been rubbed by sandpaper. Nail changes in the case of it

is produced by a remittent, waxing and waning inflammatory insult to the matrix that never ceases (Tosti et al., 1995). Shiny trachyonychia characterized by shiny, opalescent nails with numerous pits. There is an intermittent, focal, and regularly recurrent inflammatory insult to the matrix that is separated by periods of normal matrix function.



Figure 1: The opaque trachyonychia involving all the 20 nails..

Trachyonychia was occurred exclusively in children with the peak age of onset between the age 3 and 12 years.

Trachyonychia is a clinical diagnosis and there is no indication for a nail biopsy because it never causes permanent nail damage or pterygium, and for this reason, there is no necessity for nail matrix punch or longitudinal nail biopsy, which is invasive and cause scarring (Jacobsen et al., 2016). The most common features of histopathological examination are spongiosis of inflammatory cells into the nail epithelia.

Treatment for trachyonychia usually for a cosmetic reasons and patients may often improve

without any treatment. In patients who have an associated underlying disease, treatments for the associated disease may be beneficial in improving the appearance of the nails. Since trachyonychia is a benign condition and children tend to have shorter disease courses, pediatric patients warrant a more conservative approach. If children are bothered or parents push for treatment we can use the algorithm for treating trachyonychia. It begins with observation/active nonintervention followed by a trial period of topical treatments (3-4 months). If the patient requests further treatment, nail unit steroid injection may be considered (Haber et al., 2016).

Table 1: Dermatologic diseases associated with trachyonychia (Haber et al., 2016).

Commonly associated diseases	Uncommonly associated disease
Alopecia areata/alopecia universalis Lichen planus Psoriasis	Ichthyosis vulgaris Vitiligo Atopic dermatitis Pemphigus vulgaris Incontinentia pigmenti Congenital cutaneous candidiasis Darier's disease

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