

Diagnosis and Management of Nail Disorders in Children

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KEYWORDS

- Nail unit • Onychomycosis • Melanonychia • Trachyonychia • Onychomadesis
- Nail pitting

KEY POINTS

- Before initiating treatment of onychomycosis, it is important to establish the diagnosis with confirmatory testing.
- Most cases of longitudinal melanonychia in children are benign; rare cases of melanoma in situ have been reported.
- Trachyonychia is most commonly associated with lichen planus, psoriasis, and alopecia areata.
- The onset of onychomadesis is delayed and often appears subsequent to a systemic illness causing transient arrest of the nail matrix.
- Nail pitting is a nonspecific sign that may not require therapy.

INTRODUCTION

Although pediatric nail disorders are a limited part of a general pediatric practice, it is important for practitioners to be able to recognize and treat common nail pathology and determine when referral to a dermatologist is indicated. There is a wide spectrum of congenital, inflammatory, infectious, and neoplastic conditions that may affect the nail unit in children. Some of these conditions are isolated to the nail unit, whereas others have associated mucocutaneous or systemic manifestations. Herein, we describe several frequently encountered pediatric nail changes and disorders, as well as diagnostic considerations and treatment options.

NORMAL NAIL ANATOMY

To understand the pathologic processes affecting the nail unit, it is important to first recognize normal anatomy. The nail unit is composed of a variety of structures,

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including the nail plate, nail bed, nail matrix, proximal and lateral nail folds, and hyponychium (Fig. 1).

The nail plate is the hard and translucent portion of the nail unit, composed of onychocytes, which we normally clip at its free edge. It is bounded on 3 sides by the proximal and lateral nail folds. The cuticle seals the nail plate from the outside environment at the proximal nail fold. The nail matrix is located beneath the proximal nail fold and is the germinative epithelium that creates the nail plate. The nail bed represents the epithelium and connective tissue on which the nail plate rests. The hyponychium is the distal aspect of the nail unit, at the junction of the free edge of the nail plate and the nail bed.

ONYCHOMYCOSIS

Onychomycosis is defined as a fungal infection of the nail plate. Although it is a nail problem that dermatologists frequently encounter, it is relatively uncommon in children less than 18 years of age, with an estimated prevalence of 0.3% worldwide.¹ The number of cases in children seems to be increasing each year. This increase is perhaps related to increased use of occlusive foot wear, communal locker rooms, public swimming pools, and inoculation from affected family members. Adolescents may develop onychomycosis more commonly than younger children, and toenails are more often affected than fingernails. Immunocompromised individuals (ie, HIV, transplant recipients) and children with Down syndrome are more likely to acquire fungal infections of the nail.^{2,3}

Onychomycosis can be caused by dermatophytes (*Trichophyton* species, *Microsporum* species, *Epidermophyton* species), as well as nondermatophyte molds and *Candida*. *Trichophyton rubrum* is the most common cause of onychomycosis. There are several types of onychomycosis described in the literature:

- Distal lateral subungual onychomycosis
- Proximal subungual onychomycosis
- Superficial white onychomycosis
- *Candida* onychomycosis
- Endonyx onychomycosis
- Total dystrophic onychomycosis

The most common type of onychomycosis seen in children is distal lateral subungual onychomycosis,⁴⁻⁶ characterized by yellow discoloration of the nail plate,

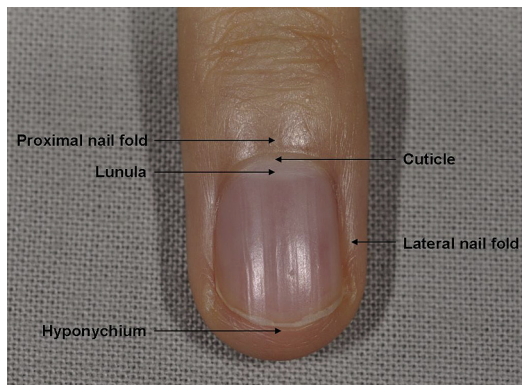


Fig. 1. Normal nail unit. Specific anatomic areas are highlighted.

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