

Onychomycosis: A Rare Presentation of Fungal Urinary Tract Infection in an Extremely Preterm Neonate

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ABSTRACT

Onychomycosis refers to nail infections, caused by fungi including yeasts and non-dermatophyte moulds. One or several toenails or fingernails (seldom all) may be involved in this condition. Many cases of fingernail onychomycosis are due to yeasts. Fungal infection has emerged as an important cause of neonatal infection, associated with significant morbidity and mortality, especially in very low birth weight (< 1500 g) and extremely low birth weight (< 1000 g) infants. Herein, we report a case of a 24-day-old male infant, who presented with onychomycosis on the left ring fingernail, associated with fungal urinary tract infection (UTI). The evaluation of nails helped us detect fungal UTI. To date, there have been no reports suggesting onychomycosis as a presentation of fungal UTI. We could not find the association between onychomycosis and neonatal fungal UTI. Hence, retrospectively, it can be said that onychomycosis was a presentation of fungal UTI. Further studies are required to evaluate the etiology and treatment of neonatal onychomycosis. Moreover, dermatologists should pay particular attention to this rare event.

Keywords: Neonate, Onychomycosis, UTI

Case presentation

A male preterm infant (born at 28 weeks of gestation) with a very low birth weight (birth weight of 1100 g) was admitted to the neonatal intensive care unit since birth. The infant suffered from hyaline membrane disease and needed short-term ventilation for approximately two days. He had umbilical venous catheter for 10 days and had received total parenteral nutrition for seven days.

The infant was on full orogastric tube feeding within 10 days after life. He received antibiotics for five days and the immediate postnatal course was uneventful. He presented with apnea of prematurity. Moreover, he suffered from an evolving chronic lung disease and needed oxygen. On day 24 of life, with regard to respiratory distress and recurrent episodes of apnea, sepsis workup was performed. Also, his hemogram showed normal results and C-reactive protein (CRP) test was positive.

On day 26, the subject was noted to have a thick discolored yellow nail on the left ring finger, suggestive of onychomycosis, as shown in Figure 1. Nail scrapings were sent for KOH mount, microscopic evaluation and culture. Nail scraping culture was sterile. Urine sample collected with all aseptic techniques showed fungal hyphae. Urine and blood cultures were sterile.

Considering the fungal UTI and onychomycosis, the infant was given intravenous fluconazole for 14 days. The patient's status improved rapidly upon the administration of intravenous fluconazole. The nail lesion cleared gradually and repeat urine routine examination was normal. The infant was discharged on day 56 of life. At discharge, no recurrence or systemic sequel was reported.

Discussion

Fungal infection has emerged as an important cause of neonatal infection, with significant morbidity and mortality, especially in very low birth weight (< 1500 g) and extremely low birth weight (< 1000 g) infants (1-5). The clinical manifestations of Candida infections in neonates vary, ranging from localized infections of the skin and mucous membranes to life-threatening systemic infections with multi-system organ failure.

Host risk factors, such as prematurity and use of invasive procedures, are important determinants of the severity and type of neonatal Candida infections (3, 5). In the present case, the infant was at risk of fungal infection. He presented with fungal UTI and onychomycosis.

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Figure 1.Left ring finger nail onychomycosis

KOH examination of nail bed scrapings for demonstrating dermatophytic hyphae and arthrospores is the best means of confirming the diagnosis of proximal and distal subungual onychomycosis in patients with a suggestive clinical image. The specificity of KOH examination for the diagnosis of fungal involvement is high, whereas its sensitivity is variable. In the present case, we could not find any fungi in nail scrapings.

So far, no similar cases have been reported in the literature. In fact, the present case is the first report of neonatal onychomycosis. We could not find the association between onychomycosis and neonatal fungal UTI. However, the evaluation of nails helped us detect fungal UTI. Hence,

retrospectively, it can be said that onychomycosis was a presentation of fungal UTI.

To date, there have been no reports, suggesting onychomycosis as a presentation of fungal UTI. Therefore, further studies are required to evaluate the etiology and treatment of neonatal EM. Moreover, dermatologists should pay particular attention to this rare event.

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