

# Paronychia in a Neonate

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A 3-week-old boy, born at 40 weeks and 6 days, presented to our pediatric primary care urgent care clinic on day 26 of life with maternal concern that the patient had not had a bowel movement in 3 days. The patient was feeding well and not vomiting.

The patient's mother also asked the physician to examine the patient's finger for a hang nail. The mother denied cutting, clipping, or filing the patient's nails. She also denied using her teeth to bite the patient's nails as a means to shorten them or remove a hang nail.

## History

The patient had a medical history significant for neonatal abstinence syndrome (NAS) due to perinatal methadone exposure and perinatal hepatitis C virus exposure. The patient's mother noted that the patient had been fussier than usual, which she attributed to the change in bowel pattern.

Both parents had a history of skin infections, though those were in the past and not temporally related to the infant's

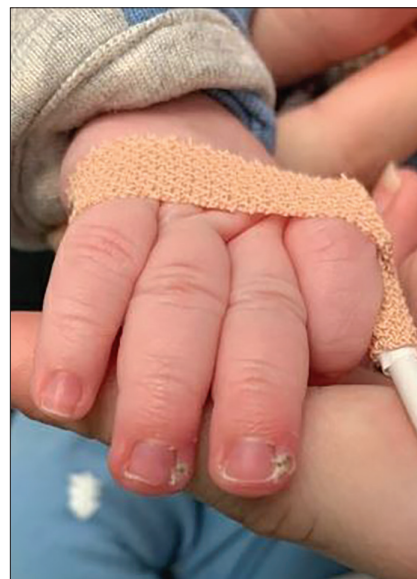
presentation. The patient's mother had had a skin infection in 2016, which required surgical incision and drainage and treatment with intravenous antibiotics. The patient's father also had a history of skin infections requiring antibiotics. He did not have an infection at the time of the patient's presentation.

## Physical examination

The patient's vital signs were within normal limits, and findings from an abdominal examination were normal. Physical examination findings were significant for swelling and erythema with purulent drainage from the nail bed on the patient's left distal thumb. The nail beds of the third and fourth digits of the patient's right hand also had purulent fluid collections, though they were not draining, and the digits were not swollen or erythematous (Figures 1 and 2). Although he was afebrile and well-appearing, the patient was referred to the emergency department (ED), due to his young age, for further work up of this localized infection.



**Figure 1.** The patient's left distal thumb was swollen and erythematous with purulent drainage from the nail bed.



**Figure 2.** The nail beds of the third and fourth digits of the patient's right hand also had purulent fluid collections.

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## DISCLOSURES:

The authors report no relevant financial relationships.

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## Diagnostic Tests

In the ED, the following tests were performed: a gram stain, wound culture, blood culture, herpes simplex virus (HSV) polymerase chain reaction (PCR) test of the wound drainage, and complete blood cell count (CBC). The results of the CBC were reassuring, with no elevation in white blood cells. The results of the HSV PCR test of the wound drainage were negative. The blood culture did not grow any organisms. The wound culture grew *Staphylococcus aureus*. Susceptibilities showed that it was methicillin-sensitive *Staphylococcus aureus* (MSSA). The patient was subsequently admitted to the hospitalist service and received intravenous clindamycin and was observed for 24 hours.

## Discussion

Although the infant initially presented with a change in bowel patterns, additional historical information such as his feeding patterns and lack of vomiting, as well as his excellent weight gain and normal abdominal examination, suggested that this was a normal newborn bowel pattern and was not cause for concern. No intervention was required. However, it was the incidental finding of paronychia that warranted additional work up.

Paronychia is an inflammation of the fingers or toes in 1 or more of the 3 nail folds. Paronychia can be acute or chronic, with chronic paronychia being present for longer than 6 weeks. Acute paronychia usually involves 1 digit at a time, whereas chronic paronychia typically involves multiple digits. Risk factors for paronychia include accidental trauma, artificial nails, manicures, manipulating a hang nail, occupational trauma, ingrown nails, and nail biting.<sup>1</sup> Oral trauma in the pediatric population from finger sucking is a predisposing factor. However, paronychia is uncommon among infants younger than age 1 month.<sup>2</sup>

In our case, the patient was only 3 weeks old at the time of presentation, and he presented with multiple fingers affected. There is a paucity of literature

that describes paronychia in neonates. For example, one case study describes a 10-day-old girl who had been diagnosed with NAS at birth and had paronychia of the second and third digits on the left hand. Her paronychia was attributed to prolonged finger sucking as a source for self-soothing for NAS, which is also a possible predisposing factor in our case.<sup>2</sup> There are other case reports of paronychia in neonates as well.<sup>3,4</sup>

The differential diagnosis for paronychia is broad, but the most common diagnoses include eczema, herpetic whitlow, and psoriasis. Although acute paronychia can lead to felons, they are differentiated by the site of infection.<sup>1</sup> The most common causes of acute bacterial paronychia in the adult population are *S aureus* and *Staphylococcus pyogenes*. In the pediatric population, mixed aerobic and anaerobic infections are more common, which could be due to differing routes of inoculation, with pediatric nail biting and finger sucking being the primary route in that population.<sup>2</sup>

Treatment of acute paronychia is based on the severity of presentation. If only mild inflammation is present and there is no overt cellulitis, treatments include warm soaks, topical antibiotics (with or without topical steroids), or a combination of topical therapies. If an abscess is present, it should be drained. Antibiotics are not generally needed after successful drainage, but oral antibiotics are warranted in patients with overt cellulitis and possibly those who are immunocompromised or severely ill.<sup>1</sup>

Outcome of the case. In our case, the patient was successfully treated with systemic antibiotics due to his young age, presence of cellulitis of the left thumb, and the fact that he had multiple fingers affected. He was discharged from the ED after 24 hours of observation to complete a 7-day course of oral clindamycin. At a follow-up appointment 6 days after discharge, the paronychia had completely resolved.

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