

Swollen toes

Both of this youngster's big toes were swollen, yet there was no history of trauma or unusual exposure.

A 15-MONTH-OLD BLACK MALE was brought to the pediatric emergency department by his grandmother because she was concerned about his 2 swollen big toes. The patient's grandmother said that the swelling began 36 hours prior and that her grandson's big toes had continued to increase in size. She denied trauma, bites, or unusual exposures and said that although her grandson had been fussier than usual that day, he was eating and drinking normally and had normal urine output.

The patient had a history of developmental delay, but was otherwise healthy. He had no rashes, and there was no recent history of vomiting, diarrhea, difficulty breathing, or fever.

Examination of the patient's skin revealed diffuse edema and erythema of the bilateral great toes (FIGURE 1A), with large overlying bullae extending from the dorsal surface of the base of the great toes around to the plantar (volar) surface of the foot (FIGURE 1B). The bullae on the

plantar surface were approximately 4 cm long, extending from the tip of the toes proximally to the region of the head of the first metatarsal.

The patient's vital signs were notable for a rectal temperature of 100.2° F and a heart rate of 180 beats per minute.

Initial lab tests included a complete blood count (CBC), blood cultures, and urinalysis with urine culture. The CBC revealed a white blood count of 27,000/mcL (normal: 6000-17,500/mcL). Both wound culture and herpes simplex viral culture were negative. An intranasal surveillance culture for methicillin-resistant *Staphylococcus aureus* (MRSA) was also negative.

Given the patient's fever and leukocytosis, a 100-mg dose of intravenous clindamycin was administered.

- WHAT IS YOUR DIAGNOSIS?
- HOW WOULD YOU TREAT THIS PATIENT?

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FIGURE 1

Edema, erythema, and bullae of the great toes



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Diagnosis:
Blistering distal dactylitis

We made a clinical diagnosis of blistering distal dactylitis (BDD), a condition typically caused by infection with Gram-positive bacteria. BDD is generally described as a localized infection of the volar fat pads of one or more fingers. The infection may also occur more proximally on the hand or involve the thumbs or toes.¹

■ **Who's at risk?** BDD occurs among children ages 2 to 16 years, although it has been reported in infants as young as 6 months and in adults. No cases have occurred among the elderly.²⁻⁷

■ **The most common etiologic agents** are group A beta-hemolytic *Streptococci*. Less commonly reported agents include *Staphylococcus aureus*, *S. epidermidis*, group B *Streptococci*, and MRSA.^{1,6,8} The presence of multiple bullae may be predictive of infection with *S. aureus*.⁹

A clinical diagnosis

Diagnosis is usually made on clinical grounds based on the presence of large, tense, superficial, and typically painful bullae, the base of which may be erythematous. Culture of the blister fluid and the base of an unroofed blister may confirm the presence of a *Streptococcus* or *Staphylococcus* species.

■ **Lab tests** are typically not required to confirm a diagnosis of BDD. However, wound cultures of blister fluid, rapid antigen testing for group A beta-hemolytic *Streptococci*, and viral culture or polymerase chain reaction testing for herpes simplex virus may be considered.

Rule these conditions out

Lesions similar to those seen with BDD can be caused by the following infections and irritants.^{4,5,8}

■ **Herpetic whitlow** is caused by a herpes simplex virus infection. It presents as a cluster of painful vesicles or ulcers with an erythematous base on the distal part of a finger or toe.

■ **Bullous impetigo** is the result of a staphylococcal infection, which produces an epidermolytic toxin leading to bulla formation. Lesions may occur anywhere on the body but are most common on the face.

■ **Irritant or allergic contact dermatitis** results from an external topical exposure and is typically localized to the area of contact. The reaction is an eczematous eruption that may include bullae.

Treatment is typically empiric

Treatment of BDD includes wound care with wet-to-dry saline dressings, incision and drainage of the bulla(e), and a systemic beta-lactamase-resistant antibiotic. Topical antibiotics alone are not recommended.⁷

■ **Our patient** was transitioned from intravenous to oral clindamycin, 100 mg every 8 hours, and the bullae were incised and drained. His leukocytosis resolved within 24 hours, and he continued to do well. At follow-up one week later, the patient's blisters were healing well, and he was playful and eating and drinking normally. **JFP**

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➤ While blistering distal dactylitis typically affects the volar fat pads of the fingers, it may also occur more proximally on the hand or involve the thumbs or toes.



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