A young girl with a painful rash

The speed with which this rash spread and the fact that the patient’s skin sloughed off when pressure was applied made the diagnosis clear.

A 3-YEAR-OLD GIRL presented with a rapidly progressing rash. The rash began the previous day with redness around her lips and nose (FIGURE 1). Twelve hours later, the rash had progressed to involve her neck, trunk, and inguinal area (FIGURE 2). The child’s parents reported that she had no recent illnesses or treatment with antibiotics.

On physical examination, she was febrile (101.8° F) and irritable throughout the encounter. She had perioral and nasolabial erythema and dryness. Her lips were dry with no intraoral mucosal lesions, and her conjunctiva was clear. She had a tender erythrodermal rash that was most prominent on her neck folds, back, and inguinal folds. Superficial layers of skin sloughed off when pressure was applied to areas along her back.

○ WHAT IS YOUR DIAGNOSIS?
○ HOW WOULD YOU TREAT THIS PATIENT?
The histopathology of these conditions also differs from SSSS as they have keratinocyte necrosis of varying levels of the skin, whereas SSSS only involves the epidermis.

SSSS also may be confused with drug reactions, such as DRESS (drug reaction with eosinophilia and systemic symptoms) syndrome. DRESS typically is associated with anticonvulsants and sulfonamides and may have peripheral eosinophilia and a transaminitis.

Other more self-limited vesiculobullous rashes include human enteroviruses such as coxsackie virus (hand-foot-mouth disease), echovirus, and enterovirus. However, unlike SSSS, which only affects the epidermis, these disorders may produce epidermal necrosis resulting in epidermal-dermal separation and mucocutaneous blistering.

Making the diagnosis
When a patient has classic SSSS, the diagnosis can be made based on exam findings and the patient's history. Families will usually report a generalized rash in neonates with desquamation of the entire skin. Fever is often present. Recent exposures to other family members with skin and soft-tissue infections is a possibility. If there is doubt, a skin biopsy can be obtained for histology. Lab work may reveal an elevated white blood cell count; blood culture is often negative.

The primary site of *S aureus* infection is usually the nasopharynx, causing a mild upper respiratory tract infection; therefore, nasopharyngeal cultures may be positive. Cultures can also be drawn from blood, wounds, nares, and ocular exudates if there is suspicion. Cultures from the actual blisters are typically negative, as the toxin—not the actual bacteria—is responsible for the blistering. Unlike adults who experience SSSS, children typically have negative blood cultures.

Prompt treatment is essential
Swift diagnosis and management of SSSS is important due to the risk of severe disease. It is important to start antibiotics early because methicillin-sensitive *S aureus* is a predominant cause of SSSS. The epidemiology of methicillin-sensitive and methicillin-resistant
**S aureus** (MRSA) continues to shift. A recent study suggests that empiric therapy with penicillinase-resistant penicillins, along with clindamycin, be employed until culture sensitivities are available to guide therapy.\(^2\) Local resistance patterns to **S aureus** should help guide initial empiric antibiotic treatment. Patients should receive intravenous (IV) fluids to compensate for insensible fluid losses similar to an extensive burn wound. Wound dressings placed over sloughed skin can help prevent secondary infection.\(^2\) Lastly, the use of anti-inflammatory drugs and opiates often depends upon the extent of pain the patient experiences.

**Our patient** was immediately started on IV clindamycin 10 mg/kg tid and IV fluids. She was given morphine 0.01 mg/kg for pain control. As expected, cultures of her nasopharynx, blood, and vulva did not grow **S aureus**. Although no organism was isolated, her rash rapidly improved, and she was discharged home to complete a 10-day oral course of clindamycin 10 mg/kg tid.

---

**References**