



## Case of Bullous Impetigo Developing into Staphylococcal Scalded Skin Syndrome: Case Report

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### Abstract

Staphylococcus aureus can cause exfoliative skin conditions, ranging from localized bullous impetigo (BI) to staphylococcal scalded skin syndrome (SSSS). The latter is a potentially life-threatening disorder, which leads to blistering of the upper layer of the skin, by the release of a circulating exotoxin. The disease especially affects infants and small children but has also been described in adults. SSSS usually presents with a prodrome of sore throat or conjunctivitis. The infection is often peri-facial impetigo, here is usually no bacteremia. Bullous impetigo, the toxin produces blisters locally at the site of infection, whereas in cases of the scalded-skin syndrome, it circulates throughout the body, causing blisters at sites distant from the infection.

### Keywords

Staphylococcal Skin Infections; Bullous Impetigo; Staphylococcal Scalded Skin Syndrome; Immunocompetent Infant

### Introduction

Staphylococcal skin infections are among the most common skin diseases in children. Staphylococcal scalded skin syndrome (SSSS) is a common disorder that is usually seen in infants and children and rarely seen in adults. It is caused by exfoliative toxin released by staphylococcus. Diagnosis is based on clinical examination but it can be confirmed by a skin biopsy specimen. Prompt therapy with proper antibiotics and supportive treatment has led to a decrease in the mortality rate [1]. We report a case of bullous impetigo developing into staphylococcal scalded skin syndrome in immunocompetent infant.

### Case report

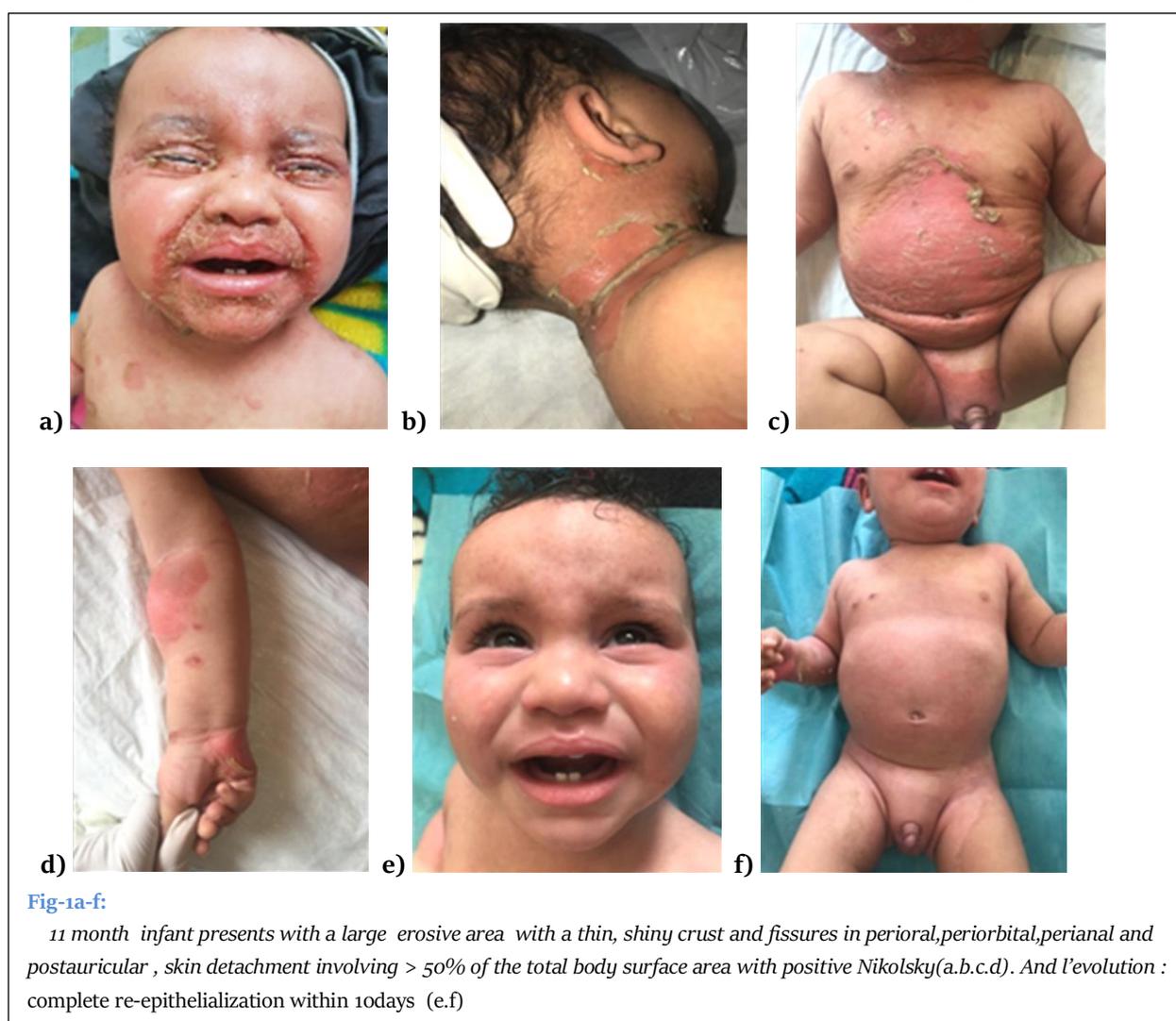
An 11month-old infant presented with a Fragile bullae develops within the erythematous areas that extend to large sheets of epidermal detachment, beginning on the central face axillae, groin, neck, inguinal areas, and black. The lesion started as a small macule with the areas dry with a thin, shiny crust and fissures in perioral and periorbital skin 4 days prior, which turned into a bulla and enlarged over 2 days, associated with a fever at 39c°. There was no known medical history of trauma or burn. On physical examination, a large erosive area with a thin, shiny crust and fissures in perioral,

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periorbital, perianal and postauricular, skin detachment involving > 50% of the total body surface area with positive Nikolsky sign, but the mucosal surfaces were not involved. Bullous impetigo, staphylococcal scalded skin syndrome (SSSS) and toxic epidermal necrolysis were raised as possible diagnoses. Swab/tissue cultures have performed, the results yielded amoxicillin-susceptible *Staphylococcus aureus*, as well as punch biopsy has performed after hospitalization, revealed acantholysis at the upper spinous and granular layer with polymorphous infiltrates at the upper dermis. These findings, we diagnosed bullous impetigo developing into staphylococcal scalded skin syndrome. Intravenous amoxicillin+clavunalic acid (50mg/kg per day) and local supportive care resulted in quick improvement with complete re-epithelialization in 10 days(**Fig-1a-f**).

## Discussion

*Staphylococcus aureus* is often responsible for late septic infections, more rarely of toxic ones, occurring in neonatal period [2,3]. Although bullous impetigo and SSSS are considered as a spectrum of disease caused by *staphylococcus aureus* induced exfoliative toxins, they have distinct differences [2,3]. In bullous impetigo, the exfoliative toxins are restricted to the area of infection, and bacteria can be cultured from the blister contents. In staphylococcal scalded skin syndrome the exfoliative toxins are spread hematogenously from a localized source causing widespread epidermal damage at distant sites [4,5]. The lesions of bullous impetigo are commonly seen on the face, trunk and extremities which are vesicles to begin with and later becoming pus-filled, followed by rupture and crusting. The lesional bacterial culture reveals *S. aureus*. Nikolsky's sign, a disruption of normal skin caused by mechanical stress, is negative. In SSSS The diagnosis is mainly



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clinical, based on the findings of tender erythroderma, bullae, and desquamation with a scalded appearance especially in friction zones, periorificial scabs/crusting, positive Nikolsky sign, and absence of mucosal involvement [4,5]. The diagnosis can be confirmed by culturing *S.aureus* from any suspected primary focus of infection, but A skin biopsy is usually not necessary, but if performed, may show superficial intraepidermal separation along the granular cell layer [6,7]. In our patient, bullous impetigo was characterized by isolation of *S.aureus* and by histological findings. However, there was no case of extensive bullous impetigo followed by SSSS in neonates, as far as we know. Once SSSS is diagnosed, the treatment consists of supportive care and eradication of the primary infection with anti-staphylococcal antibiotics administered by vein for a minimum of seven days [8]. Bullous impetigo and staphylococcal scalded skin syndrome have a different prognosis.

## Conclusion

In conclusion, clinicians should be aware, although not frequent, that bullous impetigo may progress to SSSS which differs in mortality and close observation is required whenever suspicious.

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