

Case Report

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Severe Bullous Impetigo in A 4-Month-Old Infant: A Case Report

Rachael Ireri^{1*}, Evelyn Nyamai² and Veronica Njaramba¹

¹Department of Clinical Medicine Kenya Medical Training College: Rachael Ireri, Veronica Njaramba

²Department of Nursing Kenya Medical Training College: Evelyn Nyamai

ABSTRACT

Background: Impetigo is a skin bacterial infection that mainly affects the superficial skin; however, it can spread deeper into the tissues. It commonly affects children under 5 years of age. It frequently occurs in crowded areas such as daycare centers, and schools that have poor hygiene. There are two forms: bullous and non-bullous impetigo (impetigo contagiosa). Non-bullous impetigo is more common and is mostly seen as a secondary infection in conditions that affect the skin.

Case Presentation Summary: We present an interesting case of a 4-month-old male infant brought to our pediatric outpatient clinic with a one-week history of fragile fluid-filled vesicles, flaccid blisters, and peeling of the skin. Multiple fluid-filled vesicles and flaccid blisters were present mainly on the scalp, face, neck, part of the trunk, and upper limbs. The mother reported having received a prior treatment 3 days before of calamine lotion and erythromycin. However, the symptoms were increasing gradually and the vesicles enlarging. No other medication was given.

Conclusion: Skin changes and skin-related problems occur frequently in children and account for about 30% of pediatric primary care visits. There are many different causes of pustules in childhood including infectious and non-infectious causes. Clinical suspicion and culture and sensitivity are important guides in diagnosis. Besides, Pediatric dermatology services and mentorship are highly inaccessible, especially in low and middle-income countries. This greatly impacts the management of pediatric dermatology cases as many are either misdiagnosed or take a long referral process.

*Corresponding author

Rachael Ireri, Department of Clinical Medicine Kenya Medical Training College, Kenya.

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Abbreviations

CRP: C-reactive protein

ESR: Erythrocyte sedimentation rate

VDRL: Venereal Disease Research Laboratory Test

HIV: Human Immunodeficiency Virus

Introduction

Impetigo is a common and highly contagious, superficial, bacterial skin infection prevalent in children under 5 years of age [1]. Among children, impetigo is the most common bacterial skin infection and the third most common skin disease. It is characterized by an inflamed and infected epidermis caused by *Staphylococcus aureus*, Group A beta-hemolytic *Streptococcus pyogenes*, or both. Currently, the most isolated pathogen is *Staphylococcus aureus* and the most common type is nonbullous impetigo [2, 3].

The less common bullous impetigo is a mild end-of-a-spectrum disease characterized by fragile fluid-filled vesicles and painful flaccid blisters and is caused by pathogenic strains of *S. aureus*. In bullous impetigo, exfoliative toxins are restricted to the area of infection and bacteria can be cultured from the blister contents. In rare cases, the toxins can be spread haematogenously from a localized source causing widespread epidermal damage at distant

sites. Bullous impetigo most commonly affects neonates but also can occur in older children [4-6].

In Kenya, there are few dermatologist specialists who are mainly found in urban areas. Primary healthcare contacts of the patients are mainly Clinical officers and nurses. Most of the primary healthcare facilities lack testing facilities which are key in the diagnosis of dermatological conditions. In our case report, we present a case of a 4-month-old infant seen by a team of clinical officers and nurses. We share the cascade of clinical diagnosis and investigations used in the diagnosis of the case and the difficulties we experienced.

Case Presentation

We report a case of a 4-month-old male infant brought to our pediatric outpatient clinic with one-week history of fragile fluid-filled vesicles, flaccid blisters, and peeling of the skin. Multiple fluid-filled vesicles and flaccid blisters were present mainly on the scalp, face, neck, part of the trunk and upper limbs. The mother reported having received a prior treatment 3 days before however, the symptoms were increasing gradually and vesicles enlarging. She reports having applied calamine lotion and given the infant erythromycin with no improvement, which was a prescription from a previous hospital visit; no other medication was given.

Findings from a physical examination revealed a temperature of 38.4 degrees celcius other vital signs were normal. He weighed 6.5Kgs. No lymphadenopathy noted. Multiple fragile fluid-filled vesicles and flaccid blisters present mainly on the scalp, forehead, face, neck and trunk. The flaccid bullae had sharp margins and no surrounding erythema. The ruptured bullae formed yellow crusts. The roof of the blisters ruptured easily with a clear fluid revealing shiny and wet basis. There was also a white paint over the blisters and vesicles which we presumed was the calamine lotion. Peeling of skin and hemorrhagic spots were noted on the affected areas. The anogenital area, buttocks and oral cavity were not affected. We enquired on whether there were other children reporting similar symptoms and the mother reported none.



Figure 1

Many skin swabs specimens were obtained from different areas for culture and sensitivity and microbiological examination. A culture and sensitivity result showed growth of Staphylococcal aureus and was sensitive to Flucloxacillin. A complete blood count sample indicated moderate leukocytosis, Urinalysis, ESR and C-Reactive Proteins were normal. Additionally, serological tests for VDRL and HIV were negative

Based on the clinical and laboratory findings a diagnosis of bullous impetigo was considered. He was started on intravenous Flucloxacillin and metronidazole, topical grabacin cream, zinc tablets and daily saline soaks. After 5 days of treatment the 90% of blisters and vesicles had dried up and healed.



Figure 2: After 5 days of Treatment

Discussion

Bullous Impetigo is a less contagious infection compared to nonbullous impetigo that is usually transmitted by direct contact especially in crowded areas such are daycare centers, kindergartens and schools. Children normally become infected through contact with other children, but also can be due to overgrowth of the normal skin bacterial due to host factors [7].

Normal skin is colonized by large numbers of bacteria that live as commensals in its surface or in hair follicles. Sometimes, the overgrowth of these bacteria causes skin diseases, and in other occasions, bacteria that are normally found on the skin can colonize it and cause diseases [8]. Host factors such as integrity of the skin barrier, Skin pH, presence of sebaceous secretion and production of defenses and adequate nutritional status, play an important role in resistance to infection [9].

Other factors such as hygiene among the children and their care givers greatly impacts on the chance of acquiring skin infections among other infections. For instance, the act of handwashing with antiseptics and soap regularly significantly decreases diarrhoea, impetigo among other infections [10].

The aims of treatment embrace relieving the discomfort and improving cosmetic appearance of the lesions, preventing further spread of the infection within the patient and to others, and preventing recurrence. Treatments ideally should be effective, inexpensive, and have limited side effects [11]. Possible complications include; Staphylococcal Scalded Skin Syndrome (SSSS), osteomyelitis, septic arthritis, septicemia, cellulitis, erythema multiform and erysipelas [12].

Conclusion

There are many different causes of pustules in childhood including infectious and non-infectious causes. Ruling out an infective etiology remains the corner stone of any diagnostic approach in pediatric dermatology. Early and accurate diagnosis can spare a child from unnecessary investigations and also prevent the occurrence of severe complications.

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Contributions

RI drafted the manuscript. EN and VN revised the manuscript critically for important intellectual content. All authors read and approved the final manuscript.

Ethics Declarations

Ethics approval and consent to participate
The patient guardian was informed and gave her informed consent.

Consent for Publication

Written informed consent was obtained from the patient guardian for publication of this case report and any accompanying images.

Competing Interests

The authors declare that they have no competing interests.

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