CLINICAL IMAGES

Pediatric Axillary Rash

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A 1-year-old male presented with a history of an upper respiratory infection and fever for 48 hours followed by two papular lesions that developed over the left axillary region (Figure 1). This rash subsequently spread only over the left torso and inner arm, and the erythematous papules developed a central clearing (Figure 2). The rash became more pruritic over time. The patient was diagnosed with ringworm and started on an antifungal without improvement. Another physician then prescribed a trial of cephalexin, also without improvement. The rash never spread to the other side of the body and was not associated with any fevers, chills, oral lesions, or lesions on the palms or soles. The rash resolved on its own in two weeks. The patient's sibling also developed a similar rash, which resolved without treatment as well.

QUESTIONS:

What is the most likely diagnosis?

A. Lichen striatus
B. Pityriasis rosea
C. Tinea Corporis
D. Unilateral Laterothoracic Exanthem

What is the recommended treatment?

A. Oral antibiotics
B. Supportive care and symptomatic treatment
C. Topical corticosteroids
D. Topical antifungals

FIGURE 1:
Primary papules

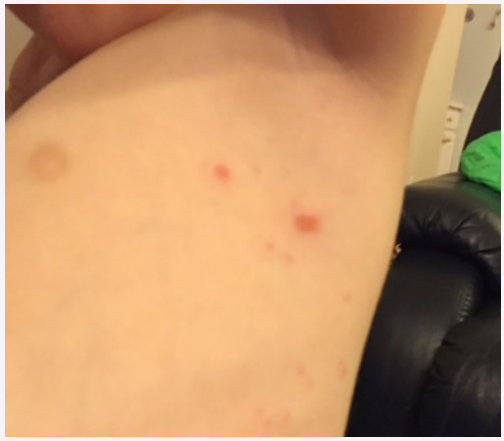
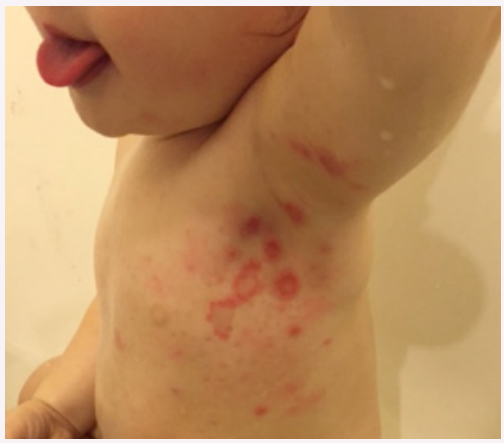


FIGURE 2:
Spread of lesions



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ANSWERS

What is the most likely diagnosis?

The correct answer is:

D) Unilateral Laterothoracic Exanthem

Unilateral Laterothoracic Exanthem (ULTE). ULTE is a rare, self-limiting unilateral rash that most commonly occurs in children. It is usually proceeded by an upper respiratory viral illness with the eruption of the exanthema starting in the axillary region.[9] Lichen striatus is a self-limiting rash that occurs in children, suspected to be caused by viral infection.[9] It is usually asymptomatic, but may be associated with mild pruritis.[9] The rash presents as hypo-pigmented flat-topped papules or vesicles in a streak-like pattern occurring along the lines of Blaschko.[9] It is usually localized to one extremity, but can be bilateral.[9] Pityriasis rosea is a self-limiting skin eruption of unknown etiology that usually occurs between ages 10 and 35 years.[10] It presents as an initial oval/round "herald patch" that precedes the full eruption that distributes along the cleavage lines of the trunk "Christmas tree pattern."[10] Tinea corporis is a fungal infection caused by the genera Trichophyton or Microsporum and does not show predisposition to age or sex.[10] It presents as single or multiple typically pruritic lesions with a progressing scaling border and central clearing.[10]

What is the recommended treatment?

The correct answer is:

B) Supportive care and symptomatic treatment

Unilateral Laterothoracic Exanthem spontaneously resolves in 4-6 weeks.[1,3,4,5,7] Antibiotics, topical steroids, and hydroxyzine have not been found to change the appearance and duration of the exanthem.[3] Treatment is focused on alleviation of symptoms.[2,5]

DISCUSSION

Unilateral Laterothoracic Exanthem (ULTE), also referred to as Asymmetric Periflexural Exanthem of Childhood (APEC) and most recently Superimposed Lateralized Exanthem of Childhood (SLEC), is an uncommon and self-limited exanthem first described in the United States in 1962 by Brunner *et al*. with Bodemer and de Prost later exploring the exanthem, more comprehensively, in 1992.[1-3] The skin eruption most commonly occurs in children with rare cases in adults.[4] The mean age of presentation is at 2 years old. However, affected children range from ages 4 months to 10 years.[2,4] Retrospective studies have shown a 2:1 female predominance, but in a prospective study done by Coustou *et al*. the ratio was 1:1.[5] Most cases typically occur during the winter and spring with no human-to-human transmission being reported and in rare instances more than one occurrence within a family.[2,5]

The eruption is characterized by erythematous micropapules commonly surrounded by a pale halo.[5] The exanthem almost always starts unilaterally, most commonly in the axilla, spreading centrifugally to involve the contralateral side in 50% of cases, lending the term unilateral misleading.[4-6] In addition to the axilla, the most common sites of involvement include the trunk and arms with minimal to rare involvement of the face, genitals, palms and soles.[2,3,5,6] Pruritus is reported in approximately 50% of the cases; however, lichenification is rarely present.[2,5,7] The clinical course can be defined in 4 main phases. The lesion will have a morbilliform or eczematous appearance. Coalescence of the lesions will begin, along with a centrifugal spread of the initial lesion with occasional areas of normal skin that have been spared. Coalescence of lesions is followed by varying degrees of dissemination bilaterally, with the originally involved side usually maintaining a more predominant involvement. Regression of older lesions leaves a dusky-gray appearance that is eventually followed by desquamation.[2,3,5]

This rare exanthem is most frequently mistaken as contact dermatitis.[7] Differentials include, but are not limited to: nonspecific viral exanthems, drug-related eruption, Gianotti-Crosti Syndrome, miliaria, lichen striatus, milia, scarlet fever, fungal infections, scabies, and pityriasis rosea.[2,7] With a history of unilateral onset, the diagnosis can be made clinically, with biopsy not generally being needed for diagnosis.[1,7] However histological evaluation, during the first 3 weeks of onset shows, mononuclear interface dermatitis containing apoptotic and necrotic keratinocytes along with a dermal mononuclear infiltrate predominantly consisting of T lymphocytes with infrequent B lymphocytes.[3,5,6] Coustou *et al*. reported a predominance of CD4 lymphocytes where McCuaig *et al*. reported a predominance of CD8 cells.[5,6] There is a pronounced lymphocytic infiltration around eccrine glands which extends from the acrosyringium to the coiled sweat gland.[5,6] A perisudoral distribution of infiltrate has been noted along with exocytosis and spongiosis around the terminal intraepidermal portion of eccrine ducts.[1,2,5,6] Acanthosis and parakeratosis have been observed in the papillary dermis.[1]

The exanthem spontaneously resolves in 4-6 weeks.[1,3,4,5,7] Antibiotics, topical steroids, and hydroxyzine have not been found to change the appearance and duration of the exanthem.[3] Treatment is focused on alleviation of symptoms.[2,5] Topical corticosteroids gave a variable response. Antihistamines were proven to be beneficial when there was significant pruritus present. Hydrating creams and bath oils were helpful during the late desquamative phase.[2,3,5]

Studies continue to search for a cause of SLEC. Although a definitive cause has yet to be found, a close temporal relation to rhinitis, mild fever, lymphadenopathy, and diarrhea has been noted, suggesting a viral connection.[6,7] Scheinfeld postulated that SLEC could be related to a reactivation of a viral infection after a case in which EBV titer results were consistent with an EBV reactivation.[4] In another case, serological findings in a child with SLEC showed a recent adenovirus infection.[1] A relationship with parainfluenza virus 2 or 3, parvovirus B19, and Human papilloma virus 6 or 7 has also been contemplated.[1,5] Niedermeier *et al*. also suggested the lateralized involvement might be explained by a post zygotic mutational event in which cutaneous epitopes on one side of the body were changed at an early stage of embryogenesis resulting in an altered response to infectious agents.[1]

Future studies are needed to determine whether the current causal hypotheses can be accepted. The rash does not usually affect the general health of the patient.[8] Due to the self-limiting nature of this exanthem, finding a causative agent is not vital to the patients' outcome.[1,2,7]

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