Case Challenge: 
Dermatology

An 11-Month-Old Boy with Widespread Itchy, Crusted, and Weeping Plaques

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An 11-month-old previously healthy boy presented with a 1-month history of widespread itchy, crusted, weeping plaques (see Figures 1 and 2). Two weeks before presentation, he was admitted to a nearby hospital for “superinfected eczema” and improved after systemic antibiotics and a 5-day course of systemic corticosteroids. However, his rash and intense itching recurred within a few days of stopping the medications. On presentation to the emergency department, he was afebrile and his weeping plaques were symmetrically distributed over the extensor upper arms and posterior legs. He also had scattered pink papules and ill-defined patches on his posterior trunk. He did not carry a previous diagnosis of atopic dermatitis or asthma and had no known allergies. A bacterial culture obtained from weeping areas on the thighs was negative.

What is the most likely diagnosis?
A) eczema herpeticum
B) streptococcal superinfection of atopic dermatitis
C) tinea corporis
D) contact dermatitis on the extremities.

For diagnosis, see page 315

Editor’s note: Each month, this department features a discussion of an unusual diagnosis in genetics, radiology, or dermatology. A description and images are presented, followed by the diagnosis and an explanation of how the diagnosis was determined. As always, your comments are welcome via email at Pediatrics@Healio.com.
Diagnosis:
Car Seat (Contact) Dermatitis

The anatomic locations of the extremely itchy, weeping plaques on his arms and legs coincided with the areas of his skin that were in direct contact with the lining of his car seat. He was diagnosed with a phenomenon that has been referred to as “car seat (contact) dermatitis,” along with a concurrent “id reaction,” a more generalized or widespread inflammatory response triggered by an initiating primary focus.

Testing for herpes simplex virus via polymerase chain reaction (PCR) from the eroded plaques was negative and bacterial cultures were negative.

In the warmer months of the year when infants begin to wear short-sleeved clothing (such as the ubiquitous “onesies”), it is important to keep car seat dermatitis in mind as an emerging, recently recognized form of contact dermatitis.

**DISCUSSION**

This entity was originally reported in a 2011 case series that characterized 21 patients, aged 3 to 14 months, seen in a private practice, pediatric dermatology clinic in Grapevine, Texas. Apart from this report, little else is available in the medical literature on this subject. However, online parenting blogs dating back to 2008 have testimonials from astute parents who had noticed an itchy rash on their children that was consistently localized to parts of the body that were in direct contact with the car seat lining. This led them to ask the question: “Is it possible to be allergic to a car seat?” This reaction was found to be more prevalent during warmer months and appeared to be more commonly associated with car seats lined with a shiny, nylon-like material. The areas of involvement included the posterior legs (100%), elbows (95%), and the occipital scalp (43%). As in our patient, two of the cases in the reported case series had an id reaction; a more widespread eczematous papular eruption distant from the site of direct exposure, also known as “auto-sensitization” dermatitis. This type of hypersensitivity reaction is often seen with other causes of severe contact dermatitis, such as those from nickel and urushiol (poison ivy and oak). Of the 21 patients in that case series, 12 (57%) had a previous diagnosis of atopic dermatitis. Of note, the authors said although involvement of the extremities in both atopic dermatitis and this form of contact dermatitis may make differentiating them difficult, involvement of the occipital scalp can be a helpful clue that car seat contact dermatitis may be present, as this is an unlikely location for typical atopic dermatitis. Given the degree of exudate, a superficial infectious process such as impetigo or superinfected eczema should be considered in the differential diagnosis. In this case, obtaining a bacterial culture can be helpful to distinguish these diagnoses or, in some cases, to determine if they are concomitant. Furthermore, given that the rash of contact dermatitis can appear vesicular or pseudo-vesicular, it may be prudent to perform studies to exclude viral processes such as herpes simplex virus, varicella-zoster virus, or enterovirus (eg, hand-foot-and-mouth disease). In the case presented here, the distribution, recurrent nature, intense itching, and previous response to corticosteroids all pointed to contact dermatitis as the most likely diagnosis.

Contact dermatitis often goes undiagnosed because it can be induced even by very short exposures and can last weeks following exposure; therefore, parents and practitioners may not accurately recall all of the potential allergens to which their child may have come into contact.

The exact source of the allergen remains somewhat of a mystery. Possible triggers include chemicals used to make the car seat flame retardant or stain resistant; however, at this stage it is not known what ingredient in the car seat or its lining definitively causes this reaction. In fact, given that many cases are associated with excessive sweating, some experts have theorized that this reaction could represent an irritant rather than allergic contact dermatitis. It has been suggested that epicutaneous patch testing using different portions of the fabric lining found in these particular car seats may help confirm this diagnosis and determine exactly which component of the car seat is to blame.

Once this diagnosis was suspected, patients benefited from placement of a fabric lining as a barrier between the car seat and the skin or replacement of the car seat with one the child can tolerate. For acute flares, topical corticosteroids help to hasten resolution of the rash. As heat, sweat, and short summer clothing are felt to play a role in facilitating this contact dermatitis, keeping the child cool and having them wear longer-sleeved clothing could provide some measure of protection in cases in which buying a new car seat is not feasible.

**REFERENCES**

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Agenda Highlights

SATURDAY, NOVEMBER 19

Breakfast Symposium: RSV – A Frontline Pediatrician’s Guide to Effective Prevention and Treatment
Supported by MedImmune, Inc.

Prevention of Infectious Diseases
Paul A. Offit, MD
• Infection control
• Improving vaccination rates

Keynote Address: Pertussis Update – As Goes California, So Goes the Rest of the Country?
Mark H. Sawyer, MD

What’s Your Diagnosis?
James H. Brien, DO

Special Considerations in Infectious Disease
Stan L. Block, MD, FAAP
• Allergies and contractible diseases
• Afflictions of international adoptees

SUNDAY, NOVEMBER 20

Diagnosis of Infectious Diseases
Joseph A. Bocchini Jr., MD
• Tuberculosis diagnostics
• Approach to dysuria

Keynote Address: Food-Borne Diseases
Larry K. Pickering, MD, FAAP

What’s Your Diagnosis?
James H. Brien, DO

Treatment of Infectious Diseases
Larry K. Pickering, MD, FAAP
• Outpatient strep infections
• Skin infections
• Cervical lymphadenitis
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Target Audience
This program is designed for pediatricians, pediatric nurses and nurse practitioners.

Educational Objectives
At the conclusion of this activity, attendees should be able to:

• Summarize the 2010-2011 American Academy of Pediatrics Committee on Infectious Diseases and Centers for Disease Control and Prevention Advisory Committee on Immunization Practices recommendations for HPV, influenza, pneumococcal and other key vaccinations in the pediatric practice.
• Develop a practice-based strategy for improving vaccination rates in practices, such as improving vaccine access and addressing vaccine refusals.
• Summarize the current protocols and guidelines regarding the neonatal transmission of infectious agents, such as HIV, syphilis, cytomegalovirus, group B streptococci, Chlamydia and herpes.
• Explain the rationale for the new RSV immunoprophylaxis recommendations in infants and the implications for the pediatric practice.
• Apply evidence-based prevention and treatment strategies to the management of infestations, including scabies and head lice.
• List the key features of the latest evidence-based diagnosis and treatment guidelines for recurrent urinary tract infections and reflux.
• Incorporate current guidelines and evidence for the prevention and management of outpatient infections, including MRSA decolonization strategies, group B streptococci risk reduction, community-acquired pneumonia and Clostridium difficile.
• Evaluate current strategies for the outpatient management of antibiotic-associated diarrhea.
• Summarize the epidemiology of endemic rickettsial and spirochetal diseases, including Lyme disease, Babesia, and Rocky Mountain spotted fever, and evidence-based treatment and prevention strategies.
• Describe clinical symptoms for sexually-transmitted infections (STIs) and develop a management strategy to treat STIs in adolescent patients.

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