

Diagnosis and Management of Diaper Dermatitis

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KEYWORDS

• Diaper dermatitis • Infant skin care • Barrier creams • Irritant contact dermatitis

KEY POINTS

- Diaper dermatitis is an irritant contact dermatitis that is typically self-limited.
- An impaired barrier function of the skin develops because of the presence of moisture, friction, and irritants from the contents of urine and feces.
- Attempts to minimize irritants with the use of modern disposable diapers and barrier emollients decrease the incidence of diaper dermatitis.

INTRODUCTION

Overview

Diaper dermatitis is the most common skin disorder in infants and is often a concern for parents and caretakers. It is an irritant contact dermatitis secondary to impairment of the normal skin barrier due to the presence of moisture, friction, urine, and feces. The condition typically resolves with conservative management. It is important to distinguish diaper dermatitis from other dermatoses that may develop in the diaper area.

Pathophysiology

The interaction of a variety of factors contributes to the development of diaper dermatitis (**Fig. 1**).¹ The moist environment and presence of friction in the diaper area lead to disruption of the stratum corneum, the outer layer of the skin that provides a barrier from external irritants.^{2–4}

The presence of urine allows the skin to become overly hydrated, increasing its permeability to potential irritants. Urine also increases the pH of the diaper environment by breaking down urea when fecal urease is present.⁵ Bile salts as well as

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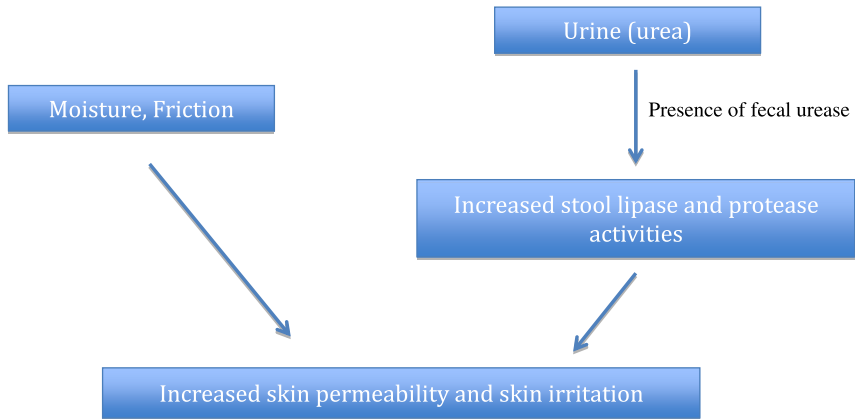


Fig. 1. Pathogenesis of irritant diaper dermatitis.

proteases and lipases from feces also contribute to the erythema and epidermal barrier disruption of the skin.^{6,7} A correlation between the number of bowel movements per day and the frequency of diaper dermatitis has been reported.^{8,9}

Microbes do not seem to play a direct role in the development of diaper dermatitis. Bacterial counts were evaluated on the skin of infants with and without diaper dermatitis and no difference was found.^{10,11} *Candida* sp have also been isolated from the skin and feces of infants with and without diaper dermatitis.¹²

Epidemiology

Diaper dermatitis is a common condition affecting 50% of patients in the at-risk age range of the pediatric population.^{9,13} It has been observed most frequently in infants 9 to 12 months in one series and toddlers in the 12- to 24-months age group in another series.^{8,13} There is no difference in its prevalence between genders or among races.¹³

With the advent of superabsorbent gel disposable diapers, the overall incidence of diaper dermatitis has decreased.¹⁴ Breast-fed infants seem to be less likely to develop moderate to severe diaper dermatitis in comparison to formula-fed infants.^{8,15} Pediatricians and family physicians provide more than 90% of physician services for patients with diaper dermatitis.¹³

Prognosis

The course of diaper dermatitis is typically episodic. Each episode is self-limiting with a mean duration per episode of 2 to 3 days.¹⁶ A small minority of those affected will go on to develop moderate to severe disease. The condition is effectively cured once the child is fully toilet trained and discontinues the use of diapers.

CLINICAL FEATURES

History

A thorough history including the infant's bathing, cleansing, and diapering routine should be obtained. Encourage the patient's family to bring in all of the products that have been used in case specific ingredients need to be checked. Factors to consider when evaluating for diaper dermatitis are listed in **Box 1**.

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