

Diaper Dermatitis

Diaper dermatitis is common in infants and one of several acute inflammatory skin disorders caused either directly or indirectly by wearing diapers. The peak age of occurrence is 9 to 12 months old, and the incidence is greater in bottle-fed infants than in breastfed infants.

Pathophysiology and Clinical Manifestations

Diaper dermatitis is caused by prolonged and repetitive contact with an irritant (e.g., urine, feces, soaps, detergents, ointments, friction). Although the irritant in the majority of cases is urine and feces, a combination of factors contributes to irritation.

Prolonged contact of the skin with diaper wetness produces higher friction, greater abrasion damage, increased transepidermal permeability, and increased microbial counts. Healthy skin is less resistant to potential irritants.

Although ammonia was once thought to cause diaper rash because of the association between the strong odor on diapers and dermatitis, ammonia alone is not sufficient. The irritant quality of urine is related to an increase in pH from the breakdown of urea in the presence of fecal urease. The increased pH promotes the activity of fecal enzymes, principally the proteases and lipases, which act as irritants. Fecal enzymes also increase the permeability of skin to bile salts, another potential irritant in feces.

The eruption of diaper dermatitis is manifested primarily on convex surfaces or in folds. The lesions represent a variety of types and configurations. Eruptions involving the skin in most intimate contact with the diaper (e.g., the convex surfaces of buttocks, inner thighs, mons pubis, scrotum) but sparing the folds are likely to be caused by chemical irritants, especially from urine and feces (Fig. 10-2). Other causes are detergents or soaps from inadequately rinsed cloth diapers or the chemicals in disposable wipes. Perianal involvement is usually the result of chemical irritation from feces, especially diarrheal stools. *Candida albicans* infection produces perianal inflammation and a maculopapular rash with satellite lesions that may cross the inguinal fold (Fig. 10-3). It is seen in up to 90% of infants with chronic diaper dermatitis and should be considered in diaper rashes that are recalcitrant to treatment.