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Recognizing and Treating Toilet-Seat Contact Dermatitis in Children

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KEY WORDS

toilet-seat contact dermatitis, plastic toilet seat

ABBREVIATIONS

ACD—allergic contact dermatitis

ICD—irritant contact dermatitis

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abstract

Toilet-seat contact dermatitis is a common condition around the world and is reemerging in the United States. It can be easily recognized and treated. However, few practitioners consider this diagnosis, which results in a delay in treatment and often exacerbation of the skin eruption. In the past, exposure to wooden toilet seats and associated varnish, lacquers, and paints led to the development of an allergic contact dermatitis on the buttocks and posterior thighs. In recent years, most public facilities have changed to plastic seats, resulting in a change in the clinical presentation of toilet-seat dermatitis. We present 5 cases of toilet-seat dermatitis in children from the United States and India and review the history, presentation, and clinical course of the disease. Our findings suggest that toilet-seat dermatitis is more common than previously recognized and should be considered in any child with a dermatitis that involves the buttocks and posterior thighs. *Pediatrics* 2010; 125:e419–e422

Toilet-seat dermatitis was first described as a category of dermatitis venenata in 1927.¹ At that time, exposure to wooden toilet seats and associated varnish, lacquers, and paints led to sensitization and development of an allergic contact dermatitis (ACD) limited to the buttocks and thighs.¹ In the 1980s and 1990s, most public facilities and homeowners in the United States changed from wooden to plastic toilet seats and sanitary seat covers became readily available, resulting in a dramatic decrease in the prevalence of this condition.

Recently, a number of reports have documented a resurgence of this condition in North America as more homeowners choose toilet seats made of exotic woods.^{2,3} Furthermore, the increased use of harsh toilet-seat detergents has been shown to promote toilet-seat dermatitis.^{4,5} Although this disorder has been well described for adults,²⁻⁴ there have been only a few reports of this condition in children.⁵ In this case series we describe toilet-seat contact dermatitis in children and underscore a typical history and physical findings that we hope will aid clinicians in recognizing this disease.

PATIENTS

Two children in the United States (cases 1 and 2) and 3 children in India (cases 3–5) were referred to their respective dermatology clinics for evaluation of long-standing intensely pruritic eczematous patches and plaques on their buttocks and thighs (Fig 1).

Case 1

A 6-year-old girl developed an eczematous eruption on her posterior thighs (Fig 1A) after she started attending a new school where she used a plastic toilet seat. This eruption improved during summer vacation and recurred in the fall. Previous dermatologic evaluations and patch-testing revealed an al-

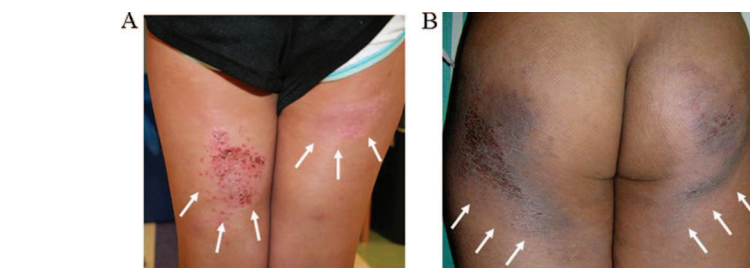


FIGURE 1

Clinical manifestation of toilet-seat contact dermatitis in children. A, Distribution of contact dermatitis is less symmetric than expected because of more significant involvement of the left leg with methicillin-resistant *S aureus* infection as described for case 1. B, Classic symmetric eruption on the buttocks and thighs (case 3).

lergy to nickel, and the chair in the classroom was suspected of containing the offending agent. Despite wearing jeans and using a protective seat cushion in the classroom, the eruption persisted for 2 years. On 2 occasions the dermatitis became superinfected with methicillin-resistant *Staphylococcus aureus* and required systemic antibiotic treatments. The family reported using Mr Clean (pH 3.5) detergent at home, whereas in school, professional Morning Mist (pH 8.5) detergent was used, which contains quaternary ammonium compounds such as didecyl dimethyl ammonium chloride and alkyl dimethyl benzyl ammonium chloride. These compounds were previously documented to induce severe skin irritation.⁶ On the basis of the history, physical findings, and negative patch-test results (except for the documented nickel allergy), a working diagnosis of toilet-seat irritant contact dermatitis (ICD) to bathroom detergents was made. She was instructed to use toilet-seat covers and to apply petrolatum and a topical steroid to the affected areas. The eruption resolved in 1 month.

Case 2

A 10-year-old girl presented with chronic dermatitis on her lower buttocks and posterior thighs that lasted for more than 1 year. On previous dermatologic evaluations she had negative patch-testing results. Her previous

physician considered a diagnosis of contact dermatitis but dismissed it as unlikely when lesions recurred after a temporary improvement with topical steroid treatment. Subsequent treatment with topical steroids and oral antibiotics failed to control the eruption. On questioning, the family reported that, similarly to case 1, the child's lesions were exacerbated during the school year and improved during vacation season. On the basis of the history and typical physical findings, a working diagnosis of toilet-seat ICD was made and the patient was asked to use toilet-seat covers, emollients, and topical steroid. The eruption healed over 3 to 4 weeks without recurrence.

Case 3

Six months before evaluation, a 14-year-old boy developed a symmetric pruritic eczematous eruption on his posterior thighs after moving into a new home (Fig 1B). The eruption started when the family acquired a red plastic toilet seat for the new bathroom. His skin eruption was subsequently diagnosed as ringworm by a local physician and was unsuccessfully treated with clotrimazole creams. The boy aggravated the condition by frequently washing the area with soap. On 1 occasion the eruption became superinfected with methicillin-sensitive *S aureus* and was treated with systemic antibiotics. On the basis of the

history and physical findings, the child was diagnosed with toilet-seat dermatitis and the family was instructed to change the seat and to use toilet-seat covers. The condition resolved in 2 weeks.

Case 4

A 12-year-old girl suffered for 2 years from an intensely pruritic eruption on her buttocks. In the past the child had developed an allergic skin eruption to plastic bangles. Similar to the child in case 3, the eruption was diagnosed as ringworm and was treated unsuccessfully with clotrimazole creams. A diagnosis of toilet-seat dermatitis was made, and the family changed the toilet seat and purchased seat covers. The patient, who spent hours on the toilet doing her homework, was also instructed to study in her room and the condition completely resolved in 2 weeks.

Case 5

A 10-year-old girl was evaluated for a 3-week history of a symmetric itchy eczematous eruption on the back of her thighs. Before her visit she was unsuccessfully treated with ayurvedic and homeopathic topical medications. Attempts to clean the area with soaps only exacerbated her condition. On the basis of typical physical findings, the patient was diagnosed with toilet-seat contact dermatitis and was successfully treated with topical steroids and regular use of toilet-seat covers.

DISCUSSION

This case series and previous reports^{3–5,7} have documented that toilet-

seat dermatitis is much more common than previously recognized in the United States and around the world. Furthermore, the incidence of this condition is rising in North America because of a resurgent popularity of exotic-wood toilet seats and frequent use of detergents that contain highly irritant/sensitizing compounds such as quaternary ammonium compounds (eg, case 1), phenol, formaldehyde, etc in public restrooms.^{7–9} In the past, individuals typically developed ACD to the essential oils, lacquers, and paint on wooden toilet seats. However, in our cases series, we documented that toilet-seat dermatitis can also arise after regular use of plastic seats. For cases 1 and 2, on the basis of the negative patch-testing results it was suspected that individuals developed ICD to detergents used in school. It is of note that in case 1 a positive patch test to nickel, which was clinically irrelevant, delayed the diagnosis of toilet-seat dermatitis.

Detergents used in public restrooms and in hospitals consistently score higher in irritation potential than detergents used at home.¹⁰ Multiple reports have documented that alkaline detergents are more likely to cause skin irritation than acidic detergents, because they perturb the body's natural acidic environment.^{11,12} pH factor was suspected to be a contributory cause of toilet-seat dermatitis in case 1.

It is often difficult to discern the diagnosis of ACD versus ICD, because the use of soaps, clotrimazole creams, homeopathic remedies, breakdown of skin as a result of superinfection, etc

create a mixed picture of both. This was true in 2 of our cases from India, in which patients were misdiagnosed with tinea corporis, increased washing of the area with soap, and aggravated their dermatitis. Because both forms of toilet-seat dermatitis respond well to emollients, topical steroids, and regular use of toilet-seat covers, it is often not necessary to subject the patient to patch-testing or other evaluations before starting treatment. It is important to underscore that regular use of toilet-seat covers is the key to success in treatment. Such seat covers can be purchased at any major retailer such as Wal-Mart or on-line. As an alternative, newspaper cut-outs could be used to provide barrier protection. Although it is possible to develop an allergy to toilet-seat covers, none have been reported thus far in the literature.

CONCLUSIONS

Toilet-seat dermatitis continues to be a common condition in children around the world. This condition can arise after exposure to plastic or wooden toilet seats. Inappropriate diagnosis of ringworm, unrelated allergy, or other dermatoses may lead to a delay in appropriate treatment or more frequent washing, resulting in aggravation of the dermatitis. Although it is often difficult to discern the ACD versus ICD diagnosis, both respond well to the described treatment. Pediatric practitioners should consider this disease for any child who presents with an itchy dermatitis on his or her buttocks and posterior thighs.

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