

Psoriasis First Presenting Around an Enteral Feeding Tube in Three Pediatric Patients: An Important Consideration for Timely Diagnosis and Management

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Abstract: Pediatric dermatologists may care for patients with percutaneous enteral feeding tubes. Although ostomy complications such as allergic contact and irritant dermatitis are common, psoriasis may be misdiagnosed. We report three novel cases of childhood psoriasis first presenting around an enteral feeding tube site. Localized psoriasis is an important clinical consideration in children with ostomy site eruptions to ensure timely diagnosis and effective management.

Psoriasis occurs in 2% to 3% of the population, usually presenting between the ages of 15 and 30 years (1). The incidence of childhood psoriasis remains unknown but is estimated to occur before age 18 years in 25% to 33% of cases (2). Risk factors include genetic predisposition, stress, infections, and trauma (3–6). A recent multicenter case–control study also considered tobacco smoke exposure and high body mass index as possible predisposing factors (6). Childhood psoriasis can be misdiagnosed, sometimes because of greater familiarity with other common skin diseases (e.g., atopic dermatitis) and the notion that children may have a past dermatologic history of a different papulosquamous disorder (e.g., seborrheic dermatitis) and later develop psoriasis (7).

Pediatric dermatologists may care for patients with percutaneous enteral feeding tube gastrostomies.

Because psoriasis can manifest through the Koebner phenomenon after localized trauma such as tattoos, burns, animal and insect bites, skin grafts, and surgical incision (8–12), it is not surprising that localized psoriasis may first present around a surgically created gastrostomy site.

The frequency of stoma complications varies from 25% to 74% (13), with contact or irritant dermatitis and fungal infections most commonly reported (13–17). Although there are limited reports of psoriasis around gastrostomy sites (13,18–21), to the best of our knowledge, this has not been reported in children. We report three novel cases of childhood psoriasis first presenting as plaques surrounding enteral feeding tube (MIC-KEY, Kimberly-Clark, Roswell, GA) gastrostomy sites (Table 1).

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CASE REPORTS

Patient 1

A 2-year-old girl with a history of trisomy 21, developmental delay, and subglottic stenosis leading to enteral feeding tube placement presented with a 1.5-year history of an intermittently scaly plaque surrounding her ostomy site. The eruption started approximately 1 year after enteral tube placement. Past treatments included many topical antifungal creams and powders, antibacterial ointments, emu oil, vitamin E oil, oral trimethoprim-sulfamethoxazole, barrier creams, and emollients. Her great-grandfather had severe psoriasis. Despite more than 1 year of compliant therapy, the eruption persisted. Physical examination of the abdomen revealed a well-defined, 8-cm, moderately indurated, scaly, erythematous plaque surrounding her ostomy site (Fig. 1). The remainder of the skin examination was unremarkable. She was diagnosed with localized plaque psoriasis and endures intermittent mild flares but has had overall improvement and good control with a class V topical corticosteroid ointment.

Patient 2

A 7-year-old girl with history of DiGeorge syndrome, developmental delay, velopharyngeal insufficiency, and enteral feeding tube placement presented with a 1.5-year history of an eruption surrounding her ostomy site (Fig. 2A) that started approximately 3 years after enteral tube placement. Past treatments included many antifungal topical preparations, oral fluconazole and griseofulvin, barrier creams, and emollients. She had no personal or family history of psoriasis. Also involving the scalp (Fig. 2B), upper chest, abdomen, and back were scattered, well-defined, moderately indurated, silvery scaling, erythematous plaques. She was diagnosed with psoriasis and achieved near clearance by her 3-month follow-up appointment with a combination regimen of a class II topical corticosteroid cream, class VI topical steroid in oil, and hand-held home ultraviolet B phototherapy unit.

Patient 3

A 10-year-old girl with a history of cerebral palsy, developmental delay, obstructive hydrocephalus, and enteral feeding tube placement presented with a 1-year history of an eruption surrounding her ostomy site (Fig. 3) that started approximately 8.5 years after enteral tube placement. Past treatments included antifungal creams, oral milk of magnesia, selenium

sulfide shampoo, lip balm, barrier creams, and emollients. She had no personal history of psoriasis, although her maternal grandmother had psoriasis. Her psoriasis cleared by her 3-month follow-up appointment with a class III topical corticosteroid ointment. She later developed scalp psoriasis, which was also well controlled with topical corticosteroids.

DISCUSSION

More than 1.5 million people in the United States have a surgically placed stoma (22). Many factors influence cutaneous ostomy complications, including stoma type, patient allergies, infection, and underlying dermatologic disease (23). Complications most often occur 1 month postoperatively (23) and cause considerable cutaneous irritation (21,24). Psoriasis limited to peristomal skin is reported in adults (13,18–21) but not in children.

Peristomal skin eruptions are often expected side effects of surgical gastrostomies and are thus not always regarded as troubling enough for professional medical attention. Lyon et al (21) evaluated patient perception of peristomal skin disease with a postal questionnaire to 525 stoma patients over a 10-year period. Of the 325 (62%) patients who responded, 235 (73%) self-reported peristomal skin disease including irritant reactions (42%); preexisting psoriasis, seborrheic dermatitis, or eczema (20%); infections (6%); allergic contact dermatitis (0.7%); and pyoderma gangrenosum (0.6% annual incidence) (21). Only 61% sought medical advice regarding treatment (21). The authors advocate a multidisciplinary approach to facilitate earlier diagnosis, prevention, and treatment of peristomal eruptions.

Recently Kalashnikova et al (13) developed an algorithm to assist nonspecialty providers with ostomy complications and identified 1,427 stoma patients, of whom 553 (38.8%) had 742 complications. Of the 355 (47.8%) peristomal skin disorders, contact dermatitis was most frequent (89.3%), followed by hypergranulation (6.8%), allergic dermatitis (2.0%), folliculitis (1.1%), psoriasis (0.6%), and herpes (0.2%) (13). Data suggest that peristomal psoriasis is much less common than eczematous eruptions. Accordingly, childhood psoriasis first presenting after surgical gastrostomies is not a well-recognized phenomenon.

We report the cases of three children who presented to the dermatology clinic with a localized eruption at an enteral feeding tube site. Although the lesions were not biopsied, a diagnosis of psoriasis was consistent with the clinical presentation of a well-defined,

TABLE 1. *Enteral Feeding Tube Psoriasis in Three Children*

Patient	Past history of psoriasis	Family history of psoriasis	Enteral feeding tube indication	Time from tube insertion to eruption (years)	Previous treatments	Time to diagnosis of psoriasis (years)	Psoriasis elsewhere	Management and results
2-year-old girl (Fig. 1)	No	Yes	Trisomy 21, developmental delay, subglottic stenosis	1	Antifungal creams, antifungal powders, antibacterial ointments, emu oil, vitamin E oil, oral antibiotics, barrier creams, emollients	1.5	No	Intermittent mild flares. Overall improvement and good control with a class V topical corticosteroid ointment.
7-year-old girl (Fig. 2A, B)	No	No	DiGeorge syndrome, developmental delay, velopharyngeal insufficiency	3	Antifungal creams, antifungal powders, oral fluconazole, oral griseofulvin, barrier creams, emollients	1.5	Yes, 4% of the body surface area involving the scalp, chest, abdomen, and back	Near clearance in 3 mos with a class II corticosteroid cream, class VI oil, and handheld ultraviolet B phototherapy unit.
10-year-old girl (Fig. 3)	No	Yes	Cerebral palsy, developmental delay, obstructive hydrocephalus	8.5	Antifungal creams, oral milk of magnesia, selenium sulfide shampoo, lip balm, barrier creams, emollients	1	Not at presentation; later developed scalp psoriasis	Cleared at 3 mos. Well controlled with a twice-daily class III topical corticosteroid ointment.



Figure 1. Peristomal psoriasis in a 2-year-old girl.

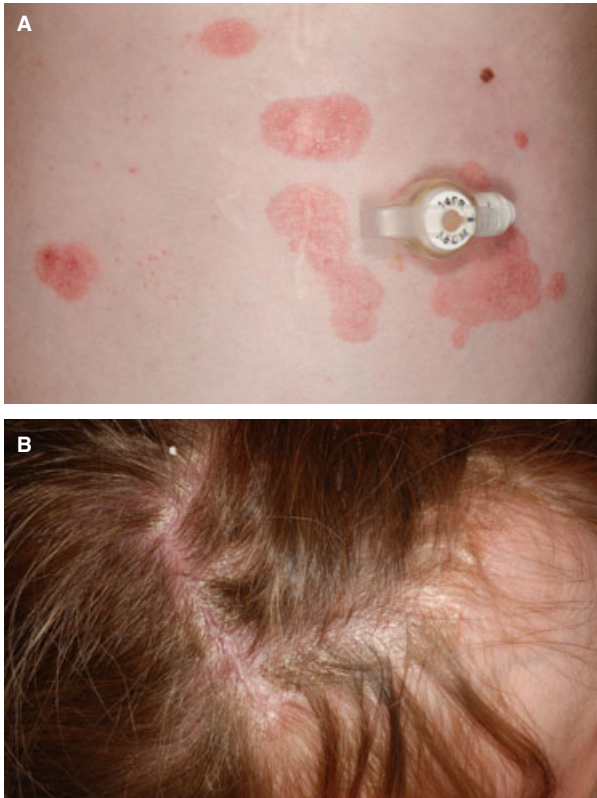


Figure 2. (A) Peristomal psoriasis in a 7-year-old girl. (B) Plaque psoriasis, approximately 4% of the body surface area, in a 7-year-old girl.

scaling, erythematous, and indurated plaque; a family history of psoriasis; characteristic plaques elsewhere; and successful management with topical corticosteroids. Each child had an underlying genetic disorder, specifically trisomy 21, DiGeorge syndrome, and cerebral palsy. The incidence of psoriasis is reported to be as high as 8% in conjunction with trisomy 21, although a direct correlation remains uncertain (25). A recent study of 67 children in South India with trisomy 21 suggested lichenification (59.7%), xerosis (46.3%), and ichthyosis vulgaris (5.9%) as more

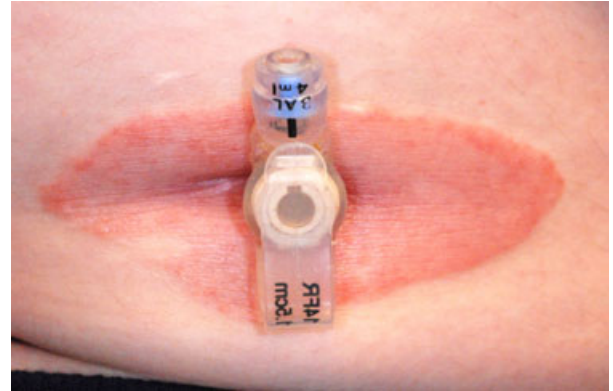


Figure 3. Peristomal psoriasis in a 10-year-old girl.

commonly encountered keratinizing dermatologic manifestations (26). Marmon et al (25) recently proposed that individuals with trisomy 21 often have high serum levels of interferon- γ , which may explain a predisposition to developing psoriasis (25). Associations between childhood psoriasis and cerebral palsy or DiGeorge syndrome are not reported. Eczematous dermatitis often occurs in patients with DiGeorge syndrome (27) and can present with lymphadenopathy and an oligoclonal T-cell proliferation in complete syndrome subtypes (28).

In our patients, the interval from enteral feeding tube insertion to cutaneous eruption ranged from 1 year to longer than 8 years. Previous trauma may determine the location of future psoriasis plaques (29). This is often encountered in infants, with chronic diaper irritation encouraging psoriasis plaque eruption in the diaper area (30). Although early data suggest that the interval to koebnerization is often between 10 and 20 days and can range from 3 days to 2 years (31,32), the lag period probably reflects inherent individual sensitivity to a Koebner response (12,33). We postulate that chronic irritation from the feeding tube set up a Koebner phenomenon in our patients, predisposing them to psoriasis at the ostomy site. Unlike other gastrostomy tubes, the MIC-KEY tube rests at skin level and is often secured tightly with a fixating device, so cutaneous irritation is not unexpected. Barrier ointments such as zinc oxide or petrolatum may help reduce enteral feeding tube friction and thus lessen the degree of chronic irritation and potentially koebnerization. Early adverse reactions such as dermatitis and fungal infections may further potentiate koebnerization at a gastrostomy site and, if present, may require combination therapy with topical corticosteroids and antifungal creams.

In conclusion, pediatric dermatologists often care for patients who have feeding tube gastrostomies.

Because of the greater frequency of other ostomy eruptions, such as contact dermatitis or fungal infections, psoriasis is less recognized, especially by caregivers and nonspecialty providers. We report three novel cases of childhood psoriasis first presenting as plaques limited to a gastrostomy site. Each patient was treated for longer than 1 year with costly and ineffective modalities such as topical antifungal and antibacterial preparations, systemic medications, vitamin oils, barrier therapy, and emollients. Localized psoriasis is an important clinical consideration in children with peristomal eruptions to ensure timely diagnosis and effective management.

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