Dermatology Practical & Conceptual

Pediatric Perioral Dermatitis Associated with Inhaled Corticosteroids: A Retrospective Case Series

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Key words: Perioral Dermatitis, Inhaled Corticosteroids, Pediatric Patients, Drug-Related Side Effects, Retrospective Studies

Citation: Brunetti T, Chessa MA, Leuzzi M, Gurioli C, Cedirian S, Neri I. Pediatric Perioral Dermatitis Associated with Inhaled Corticosteroids: A Retrospective Case Series. *Dermatol Pract Concept.* 2025;15(2):5239. DOI: https://doi.org/10.5826/dpc.1502a5239

Accepted: December 4, 2024; **Published:** April 2025

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Funding: None.

Competing Interests: None.

Authorship: Neri I and Brunetti T coordinated and supervised data collection and critically reviewed and revised the manuscript for important intellectual content. Cedirian S, Chessa MA, Leuzzi M and Gurioli C conceptualized and designed the study and critically reviewed and revised the manuscript for important intellectual content. All authors approved the final manuscript as submitted and agree to be accountable for all aspects of the work.

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Introduction

A retrospective case series was conducted in 2023 at the Pediatric Dermatology Clinic at Sant'Orsola Malpighi University Hospital. Written consent for the scientific use of images was obtained from parents. The study adhered to the Declaration of Helsinki and received local ethic committee approval.

Case Presentation

Three patients were identified with perioral dermatitis (PD) following aerosol corticosteroid use. The average age was 3.3 years (range: 2-5). All patients used beclomethasone dipropionate aerosol via face mask for sore throats, none rinsing the treated area, and manifested red micropapular and papulopustular lesions around the mouth, localized on the lower lip and chin (N=2) or in the nasolabial folds (N=1) after 5–7 days of aerosol withdrawal. Patients 1 and 3 used it twice daily for one week, and Patient 2 once daily for two weeks. Treatment of lesions involved either ivermectin 1% cream applied once daily (N=2) or metronidazole 1% gel applied twice daily (N=1) until complete resolution, with no recurrence observed at the 2-month follow-up. Complete data are provided in Table 1.

Discussion

PD is an inflammatory condition with erythematous micropapules or papulopustules (Figure 1A) around the perioral area in children aged 7 months to 13 years. Its etiology is

Table 1. Demographic, Clinical, and Therapeutic Information of Three Patients.

Patient Number	Age	Comorbidities	Aerosol Corticosteroid Treatment Information	Prevalent Lesion Site of PD	Treatment of PD	Frequency of Application of PD Therapy	Recurrence of PD After the Treatment
1	2 years	Miliaria rubra	Beclomethasone dipropionate in aerosol form via a face mask twice daily for 1 week before developing PD	Nasolabial sulcus	Topical ivermectin cream 1%	Once daily	None
2	3 years	Neurofibromatosis type 1	Beclomethasone dipropionate in aerosol form via a face mask once daily for 2 weeks before developing PD	Chin	Topical metronidazole gel 1%	Twice daily	None
3	5 years	Multiple small angiomas	Beclomethasone dipropionate in aerosol form via a face mask twice daily for 1 week before developing PD	Chin	Topical Ivermectin cream 1%	Once daily	None

Abbreviations: PD: perioral dermatitis.

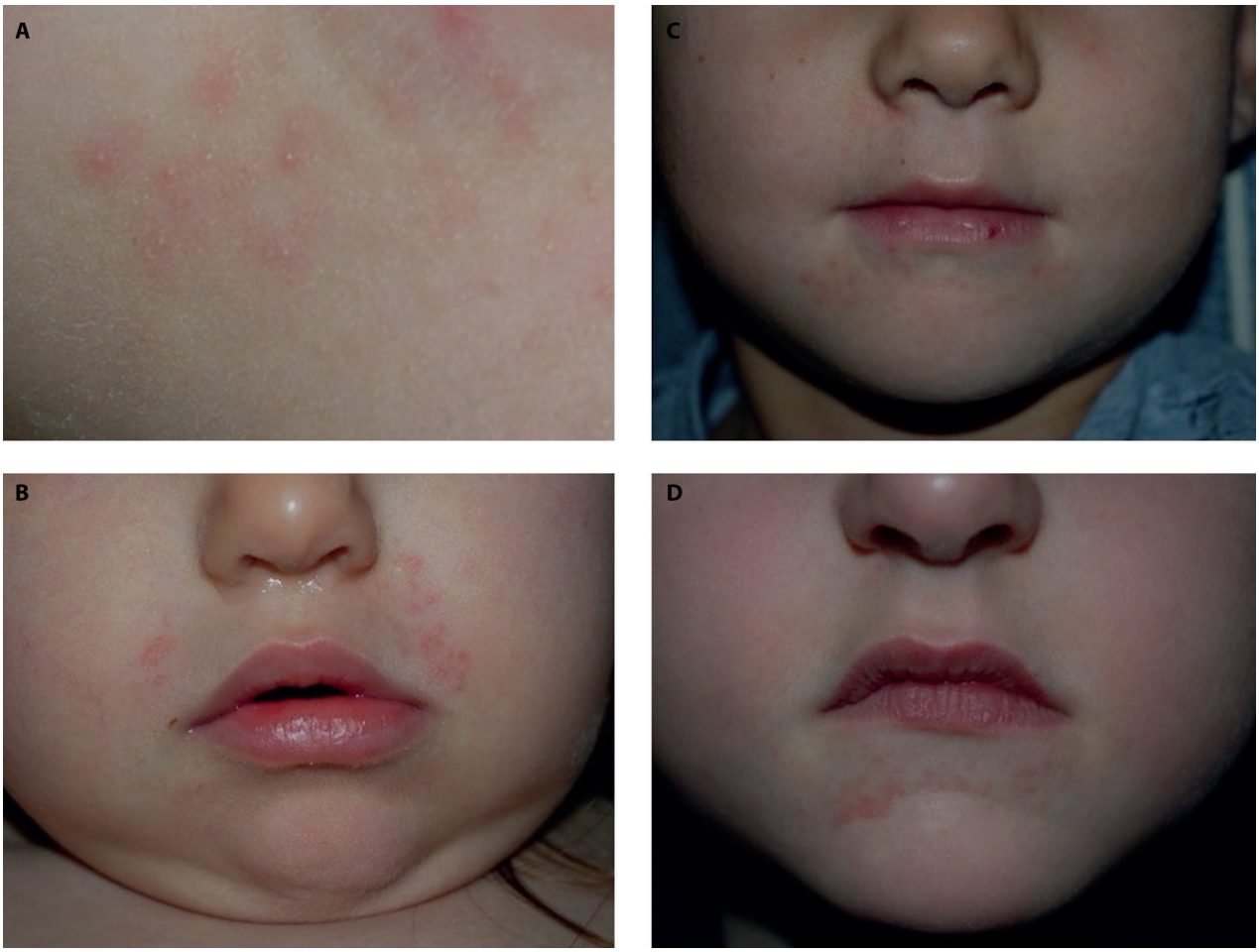

Figure 1. (A) Small erythematous papules or papulopustules. (B) Small and erythematous papules in the nasogenian sulcus, a common site for perioral dermatitis (PD). (C) Involvement of the chin area, an atypical localization of PD. (D) Close-up image demonstrating small erythematous papules characteristic of PD localized on the chin.

unclear, but it is strongly linked to systemic, inhaled, and topical steroid use. We observed an association between inhaled corticosteroid treatment and the onset of PD in three patients. Interestingly, lesions followed the mask's contour on the face: Patient 1 had erythematous micropapules-papulopustules in the nasolabial sulcus, a common PD site (Figure 1B), while Patients 2 and 3 exhibited an involvement of the lower lip and chin with a distinct sharp termination at mentolabial fold, a rare presentation likely attributed to gravitational droplet pooling in the lower section of the mask (Figures 1C and 1D). Few studies have noted that PD occurred primarily in subjects who used a device equipped with a face mask or a nebulizer without a face mask or mouthpiece, and these findings corroborate with our study, reinforcing the hypothesis of a direct local effect of inhaled corticosteroids on facial skin [1,2]. Local side effects of inhaled corticosteroids in asthmatic children associated with age, drug, dose, and device have been reported. Among them, PD, although rarely described, affects 3% of young children, and its underreporting may be due to reports primarily from allergologists, pneumologists, and physicians, who do not focus on skin disorders [3]. Regarding lesion management, eliminating corticosteroids and potential skin irritants is essential and often sufficient for resolving mild dermatitis. However, topical therapies like ivermectin, metronidazole, or systemic erythromycin may also be needed [4]. Different studies consistently show that topical 1% ivermectin administered once daily has notable advantages over 0.75% metronidazole administered twice daily [5]. Based on comparative analyses demonstrating superior outcomes and the convenience of a less frequent daily application, we prefer ivermectin.

Conclusion

Pediatricians must anticipate the potential onset of PD following inhaled corticosteroid therapy and should educate parents on lesion progression, emphasize the importance of rinsing the perioral area, and consider discontinuing corticosteroid therapy when appropriate, using suitable topical treatments.

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