

Denouement and Discussion

Chronic Bullous Dermatitis of Childhood

The physical finding of blisters arranged in the cluster of jewels pattern is highly suggestive of chronic bullous dermatosis of childhood (CBDC). With this presumed diagnosis, the patient's home medications were withheld and an empirical regimen of dapsone, 50 mg/d, and oral prednisone, 40 mg/d, was initiated. The patient was admitted for 48 hours for observation and wound care to denuded areas. Histopathologic examination of an intact vesicle demonstrated subepidermal cleft formation with a superficial perivascular, predominantly neutrophilic, infiltrate. Direct immunofluorescence performed on perilesional skin demonstrated linear staining along the basement membrane zone with IgA and C3, and minimally with IgG. These histopathologic findings confirmed the diagnosis of linear IgA bullous dermatosis/CBDC.

Chronic bullous dermatosis of childhood is an acquired autoimmune bullous disease of young children. It is the most common autoimmune bullous disease encountered within the pediatric population.^{1,2} The age at onset is reported to be between 6 months and 10 years, with a mean age at onset of 4½ years.³ No racial or sexual predilection has been reported.⁴ The lesions of CBDC are typically most prominent on the abdomen and perineum but may also involve the trunk, extremities, face, and mucous membranes.⁵ These lesions are frequently pruritic and consist of multiple large, tense bullae filled with clear or hemorrhagic fluid. The cluster of jewels or string of pearls sign is considered characteristic and refers to the annular arrangement of new vesicles or bullae around a central crust or erythematous plaque.

The differential diagnosis of childhood bullous diseases is extensive. Autoimmune blistering diseases include pemphigus vulgaris, childhood bullous pemphigoid, cicatricial pemphigoid, dermatitis herpetiformis (DH), and CBDC or linear IgA bullous disease. The hypersensitivity phenomenon of bullous papular urticaria can occasionally present with frank blisters and should be included in the differential diagnosis. Pemphigus vulgaris usually starts in the oral mucosa and is followed by blistering of the skin, which is often painful. The blisters are flaccid with a positive Nikolsky sign. Childhood bullous pemphigoid is characterized by large, tense bullae similar to those seen in the adult form of the disease. Cicatricial pemphigoid presents with severe erosive lesions of the mucous membranes that result in severe scarring. The lesions of DH are intensely pruritic and chronic. Papulovesicular lesions and urticarial wheals on the extensor surfaces in a herpetiform or grouped distribution are characteristic of DH. It is uncommon to see intact vesicles or bullae in DH because the primary lesions are often ruptured by excoriation owing to intense pruritus.⁶ Despite the differences we have listed, skin biopsy of an early, intact bulla for pathologic examination and

of perilesional skin for immunofluorescence is the most important tool for accurate diagnosis.⁷

Although several anecdotal therapeutic options have been reported, no controlled or comparative studies have been performed to our knowledge. Most reports support the use of dapsone or sulfapyridine, with or without corticosteroids, as first-line therapy.⁸ However, dicloxacillin sodium may be an option for patients with CBDC that is refractory to dapsone or sulfapyridine, as well as for those patients who are not candidates for standard therapy.⁸ If the onset of the bullous disease coincides with the use of a new prescription drug, consideration should be given to stopping the use of that medication. The list of agents implicated in CBDC continues to grow. Of all reported causative drugs, vancomycin hydrochloride is the best documented in the literature.⁹ Other potential documented triggers include ampicillin, amiodarone hydrochloride, captopril, cyclosporine, lithium, and multiple antiepileptic agents.¹⁰

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REFERENCES

1. Thappa DM, Jeevankumar B. Chronic bullous dermatosis of childhood. *Postgrad Med J*. 2003;79(934):437.
2. Powell J, Kirtschig G, Allen J, Dean D, Wojnarowska F. Mixed immunobullous disease of childhood: a good response to antimicrobials. *Br J Dermatol*. 2001;144(4):769-774.
3. Wojnarowska F, Marsden RA, Bhogal B, Black MM. Chronic bullous disease of childhood, childhood cicatricial pemphigoid, and linear IgA disease of adults: a comparative study demonstrating clinical and immunopathologic overlap. *J Am Acad Dermatol*. 1988;19(5, pt 1):792-805.
4. Zivony D, Cohen BA. Pathological case of the month: chronic bullous disease of childhood. *Arch Pediatr Adolesc Med*. 1994;148(5):533-534.
5. Farley-Li J, Mancini AJ. Treatment of linear IgA bullous dermatosis of childhood with mycophenolate mofetil. *Arch Dermatol*. 2003;139(9):1121-1124.
6. Bickle K, Roark TR, Hsu S. Autoimmune bullous dermatoses: a review. *Am Fam Physician*. 2002;65(9):1861-1870.
7. Gould WM, Zlotnick DA. Bullous pemphigoid in infancy: a case report. *Pediatrics*. 1977;59(6):942-945.
8. Siegfried EC, Sirawan S. Chronic bullous disease of childhood: successful treatment with dicloxacillin. *J Am Acad Dermatol*. 1998;39(5, pt 1):797-800.
9. Onodera H, Mihm MC Jr, Yoshida A, Akasaka T. Drug-induced linear IgA bullous dermatosis. *J Dermatol*. 2005;32(9):759-764.
10. Ho JC, Ng PL, Tan SH, Giam YC. Childhood linear IgA bullous disease triggered by amoxicillin-clavulanic acid. *Pediatr Dermatol*. 2007;24(5):E40-E43. doi:10.1111/j.1525-1470.2007.00438.x.