Methylmalonic aciduria presenting with recurrent multiple molluscum contagiosum lesions

Motonobu Nakamura* and Yoshiki Tokura

Department of Dermatology; University of Occupational and Environmental Health; Fukuoka, Japan

Key words: molluscum contagiosum, methylmalonic aciduria, immunodeficiency, methylmalonic acidemia, skin

Methylmalonic aciduria is a rare metabolic disorder with autosomal recessive inheritance. Patients with methylmalonic aciduria develop a variety of skin manifestations: superficial scalded skin lesions, alopecia, psoriasiform eruptions, acrodermatitis enteropathica-like lesions, fulminant ecthyma gangrenosum and ichthyosis. We report a Japanese boy, diagnosed with methylmalonic aciduria, who suffered from recurrent multiple molluscum lesions around the eyes.

SIR, Methylmalonic aciduria is a rare metabolic disorder with autosomal recessive inheritance.¹ It is caused by a reduction in the activity of methylmalonic coenzyme A (CoA) mutase or its coenzyme adenosylcobalamine, a vitamin B₁₂ metabolite. The clinical manifestations, poor feeding, vomiting, hypotonia, convulsions and dehydration, usually occur shortly after birth. Moreover, severe metabolic acidosis may lead to coma and death if untreated. Several cutaneous manifestations of methylmalonic aciduria have been reported in the literature: superficial scalded skin lesions, alopecia,² psoriasiform eruptions,² acrodermatitis enteropathica-like lesions,³ fulminant ecthyma gangrenosum⁴ and ichthyosis.⁵ Here we report a patient with methylmalonic aciduria, who developed multiple molluscum lesions around the eyes, which recur every few months.

Case Report

A 10-year-old Japanese boy was referred to us for evaluation of multiple growing papules around the eyes. His methylmalonic aciduria was diagnosed shortly after birth due to his recurrent vomiting. Despite the treatment with levocarnitine chloride and fluid/electrolyte support, he suffered from recurrent viral and bacterial respiratory infections. There was no consanguinity in his family and there was no relative who had methylmalonic aciduria. Physical examination revealed multiple discrete solid skin-colored papules, 1 to 4 mm in diameter with central umbilication around the both inner canthi (Fig. 1). After the diagnosis of molluscum contagiosum, we completely removed the lesions with a sharp curette. However, the papules recurred around the eyes and we treated the lesions every few months.

Discussion

The association of immunodeficiency or recurrent infections with methylmalonic aciduria appears to be infrequent. However, there

Figure 1. Multiple discrete solid skin-colored papules around the both inner canthi.

was a case report in which a 6-month-old boy with this disease died of ecthyma gangrenosum caused by systemic *Pseudomonas aeruginosa* infection.⁴ Moreover, some patients with methylmalonic aciduria showed positive blood bacteria culture, even unless they had a high body temperature. Although the blood test gave normal white blood count and immunoglobulins, our patient repeatedly suffered from viral or bacterial respiratory infections, suggesting the existence of a certain immunodeficient condition. Recurrent infections are also common features in patients affected by another organic acidemia, propionic acidemia. Propionic acidemia is characterized by tissue accumulation of propionic acid. Wajner et al. revealed that propionic acid inhibited a mitogen-activated proliferation of human peripheral lymphocytes in vitro.⁶ Methylmalonic acid may have similar immunosuppressive effect as propionic acid, which leads to recurrent infections.

*Correspondence to: Motonobu Nakamura; Email: motonaka@med.uoeh-u.ac.jp

Submitted: 05/15/10; Revised: 07/28/10; Accepted: 08/31/10

Previously published online: www.landesbioscience.com/journals/dermatoendocrinology/article/13503

DOI: 10.4161/derm.2.2.13503

References

1. Obenholzer VG, Levin B, Burgess EA, et al. Methylmalonic aciduria. An inborn error of metabolism leading to chronic metabolic acidosis. Arch Dis Child 1967; 42:492-504.
2. Bodemer C, De Prost Y, Bachollet B, et al. Cutaneous manifestations of methylmalonic and propionic acidemia: a description based on 38 cases. Br J Dermatol 1994; 131:93-8.
3. Howard R, Frieden IJ, Crawford D, et al. Methylmalonic acidemia, cobalamin c type, presenting with cutaneous manifestations. Arch Dermatol 1997; 133:1563-6.
4. Okano M, Kishiyama K, Satake N, et al. A case of fulminant ecthyma gangrenosum associated with *Pseudomonas aeruginosa* infection in a patient with methylmalonic acidemia. Scand J Infect Dis 1994; 26:107-8.
5. Boggio P, Machado MC, De Oliveira ZN, et al. Methylmalonic acidemia presenting with an ichthyosis vulgaris-like aspect. Pediatr Dermatol 2007; 24:455-6.
6. Wajner M, Santos KD, Schlottfeldt JL, et al. Inhibition of mitogen-activated proliferation of human peripheral lymphocytes in vitro by propionic acid. Clin Sci 1999; 96:99-103.