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Pediatrics 2012;129:e1072; originally published online March 12, 2012;

DOI: 10.1542/peds.2011-1054

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American Academy of Pediatrics

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abstract

Molluscum contagiosum (MC) is a self-limiting cutaneous viral eruption that is very common in children. MC infection can trigger an eczematous reaction around molluscum papules known as a hypersensitivity or an id reaction. In addition, a hypersensitivity reaction can occasionally occur at sites distant from the primary molluscum papules. These eczematous reactions are often asymptomatic or minimally pruritic. We believe that id reactions represent an immunologically mediated host response to MC virus and a harbinger of regression. Therefore, these reactions often do not require treatment other than emollients. Moreover, topical steroids or immunomodulators may suppress this process and potentiate the spread of the primary MC infection. However, in symptomatic patients, treatment should not be withheld and short-course treatments of topical corticosteroids may be used. In this case series, we describe 3 cases of hypersensitivity reactions in otherwise healthy children with MC. We hope that our report will make clinicians more aware of this common eczematous response to MC and will improve the management and counseling of these patients and their parents. *Pediatrics* 2012;129:e1072–e1075

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KEY WORDS

id reaction, molluscum dermatitis, molluscum contagiosum

ABBREVIATION

MC—molluscum contagiosum

www.pediatrics.org/cgi/doi/10.1542/peds.2011-1054

doi:10.1542/peds.2011-1054

Accepted for publication Nov 14, 2011

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PEDIATRICS (ISSN Numbers: Print, 0031-4005; Online, 1098-4275).

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FINANCIAL DISCLOSURE: The authors have indicated they have no financial relationships relevant to this article to disclose.

FUNDING: No external funding.

Molluscum contagiosum (MC) is a very common cutaneous viral infection with an estimated incidence ranging from 1.2% to 22% worldwide.^{1–3} Although MC can occur at any age, 2 peaks of incidence have been described. The first major peak occurs in school-aged children (3–9 years old), whereas the second major peak occurs in late adolescence (16–24 years).⁴ MC lesions are easy to diagnose because their classic appearance as grouped pearly papules with central umbilication. Most MC lesions are self-limiting and resolve spontaneously within months to years.^{2,5} Thus, although a number of studies propose various topical and/or surgical treatments for MC in children, most dermatologists chose to avoid painful destructive treatments and instead reassure patients and their parents that most cases resolve spontaneously in 1 to 4 years.^{6–8} However, considerable debate exists about the management of MC and, according to a recent Cochrane review, no single intervention has been shown to be convincingly effective in clearing this disease.⁸ Previous data suggested that individuals with atopic dermatitis may be predisposed to acquiring MC because of deregulations in skin barrier functions.^{9,10} However, recent analyses failed to confirm atopic dermatitis as a risk factor for developing MC.² Nonetheless, all studies agree that, once infected, atopic patients tend to experience a more recalcitrant disease course with a higher than usual relapse rate.^{10–13} Both atopic and nonatopic individuals often develop hypersensitivity reactions to the MC virus that manifest as an eczematous patch surrounding the MC lesions. Because of their eczematous appearance, these eruptions are often referred to as molluscum dermatitis or eczema molluscatum. Also, in some cases, eczematous patches appear at sites distant from MC lesions.^{14–16} The exact trigger of an id reaction in response to MC infection remains unknown.¹⁷

Although id reactions to MC virus are commonly seen in clinical practice, there are only a few reports of this condition in the literature.^{15–18} These eruptions often pose a diagnostic challenge. Specifically, molluscum dermatitis superimposed on MC papules may mask the viral eruption and lead to a diagnosis of “eczema.” Hypersensitivity reactions at distant sites may be mistaken for an atopic dermatitis flare in atopic patients. In both settings, practitioners often treat asymptomatic patients with topical steroids and/or immunomodulators that are often unnecessary and may delay the clearance of the primary MC infection.^{11,16,19,20}

In our case series, we describe id reactions to MC infection in healthy asymptomatic or mildly symptomatic children. We hope that this report will help clinicians to diagnose and manage this condition.

PATIENTS

Three children with MC were recently referred to the Johns Hopkins Children's Center Pediatric Dermatology Clinic for evaluation of a new-onset eczematous eruption.

Case 1

A healthy 4-year-old boy without a previous history of atopy developed multiple 2- to 3-mm dome-shaped flesh-colored papules with central umbilication on his chest and abdomen that were diagnosed in our clinic as MC. Two months later he returned to the clinic with an acute onset of sharply defined, mildly pruritic, eczematous patches and plaques surrounding many of his MC papules (Fig 1A). After discussion with his mother, the child was diagnosed with an id reaction to MC virus and was discharged on a twice-a-day application of a topical moisturizer and topical antibiotic for any lesions that may appear infected. The MC lesions and associated dermatitis resolved 2 months later.

Case 2

Six months before her initial evaluation, this 2-year-old girl with no history of atopic dermatitis developed multiple 3- to 4-mm umbilicated pearly papules on her chest, abdomen, and right arm. Shortly before her visit, erythematous, scaly, nonpruritic eczematous plaques appeared, surrounding most of the papules on her trunk (Fig 1B). An id reaction to MC virus was diagnosed, and she was treated with a topical moisturizer. Molluscum resolved within a month, and the eczematous eruption cleared several weeks later.

Case 3

A healthy 8-year-old boy without a history of atopy developed MC localized to the flexure areas of his arms and axillae. A year later, he presented to the clinic with asymptomatic, poorly defined, red scaly plaques surrounding molluscum lesions as well as at distant uninfected sites (Fig 1C). Similarly, id reactions to MC were diagnosed. His condition was discussed with the patient and his family, and a moisturizer treatment was prescribed. MC and the associated eczematous plaques resolved 8 weeks later.

DISCUSSION

According to a number of recent reports, the prevalence of MC is increasing in the United States.²¹ Risk factors for the disease include male gender, residence in tropical climates, frequent use of public pools/baths, and the presence of immunosuppression.^{1,2} This condition is caused by a double-stranded DNA poxvirus (MC virus). Four MC viral subtypes have been previously described, and all can produce typical MC skin lesions (types I and II are the most common).^{7,22} MC virus is highly contagious and can be transmitted by skin-to-skin or fomite routes. Furthermore, in adolescents/adults MC can be transmitted sexually. MC virus typically invades the upper epidermis without invading the basal

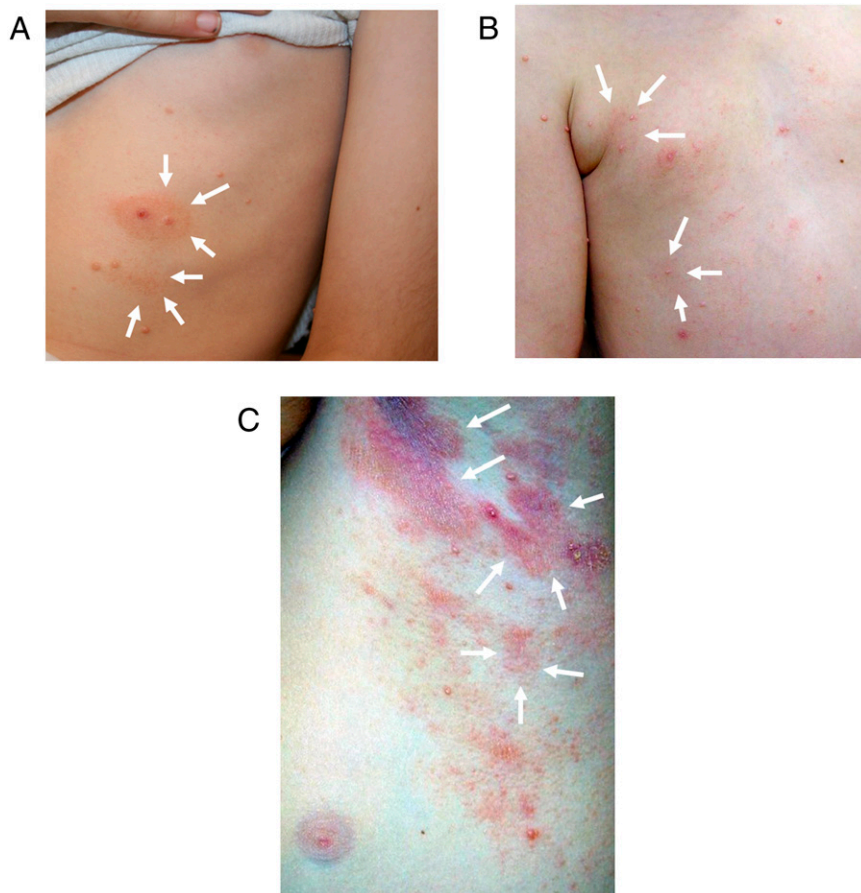


FIGURE 1

Pearly pink papules with central umbilication are visualized on the patients' chests. A and B, Select MC papules are surrounded by scaly red/brown eczematous patches and plaques (arrows). C, Nonpruritic eczematous patches and plaques at sites proximal and distal to MC papules.

layer. It evades the immune system through the production of virus-specific proteins. The virus replicates in the cytoplasm of keratinocytes in the spiny and granular layers, ultimately destroying them and causing a release of large hyaline MC viral bodies containing viral matter.²³ It was suggested that the

human immune system can become sensitized to MC elementary bodies or to soluble products of their metabolism.¹⁷ Consequently, the appearance of an eczematous delayed-type hypersensitivity eruption may herald immunologic clearance of MC lesions in immunocompetent individuals.

Our experience and previous reports underscore the high prevalence and importance of recognizing superimposed id reactions and/or hypersensitivity reactions at distant body sites to MC infection. Although previous studies suggest that the incidence of these reactions approaches 10% in children with molluscum, we suspect that the incidence in young children is significantly higher.^{11,15,17,18,24}

Appropriate management of the id reaction should primarily be focused on educating patients and their families, reassuring them, and encouraging conservative management with topical emollients and antibiotics should the lesions become infected. However, in symptomatic patients, other treatment should be discussed. Short periods of topical steroids may be used for severely pruritic id reactions. However, long-term use of topical steroids or immunomodulating therapies should be discouraged, because it may delay the ultimate resolution of MC.^{16,25} In addition, the treatment of MC lesions in rare cases for symptomatic patients may involve local destruction or surgery. However, in cases where patients present with an id reaction to MC and are otherwise asymptomatic, clinicians should adopt watchful waiting and avoid destructive treatments, because these eruptions signify the development of an immune response to the virus and likely impending viral clearance.

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