

# Separating Fact from Fiction in Molluscum Contagiosum

As incidence of molluscum contagiosum rises, it is essential to understand its etiology, recognize its typical presentation, and be aware of various therapies available.

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Primarily a disorder of children and young adults, molluscum contagiosum is caused by infection by the molluscum contagiosum virus (MCV), a large, double-stranded DNA virus that is a member of the pox virus family. Several genotypes exist, but MCV genotype 1 is responsible for 98 percent of molluscum cases that occur in the US.<sup>1</sup> Molluscum lesions typically present as centrally umbilicated, firm, dome-shaped, pearly to flesh-colored papules averaging three to five millimeters in diameter. Many have a white curd-like core that can be easily expressed.

Because molluscum is so prevalent, a clear understanding of the features and treatment of this condition can help clinicians provide the most appropriate care for their pediatric patients. There are fortunately a good number of effective treatments as well as preventative measures parents can take to help reduce the effects of this condition on children.

Listed below are some misconceptions about the disease and some accurate statements. We will separate fact from fiction.

## **1. Molluscum contagiosum is limited to undeveloped countries and is rarely seen in the US.**

**Fiction.** Molluscum is found worldwide, affecting between two to 10 percent of children annually.

While it does occur more frequently in areas of poverty or rural regions, it is also known to be more common in tropical climates. In developed countries, such as the US, its incidence peaks in school-aged children.<sup>2</sup>

## **2. As its name indicates, molluscum is contagious and spreads easily.**

**Fact.** The transmission of MCV occurs through many routes. Potential modes include direct person-to-person contact, autoinoculation, and fomites. Skin-to-skin transfer is well documented among wrestlers and masseurs, and infection through contact with opposing skin surfaces has been known to occur on the thighs of runners and skiers. Spread among family

**Take-Home Tips.** Primarily a disorder of children and young adults, molluscum contagiosum is caused by infection by the molluscum contagiosum virus (MCV). Because molluscum is so prevalent, a clear understanding of the features and treatment of this condition can help clinicians provide the most appropriate care for their pediatric patients. There are fortunately a good number of effective treatments as well as preventative measures parents can take to help reduce the effects of this condition on children. Unfortunately, misconceptions exist. ●

members is common, with 35 percent of children having a positive family contact.<sup>3</sup>

Fomites can transfer the infection through the sharing of bath towels or sponges, as well as via shaving, tattooing, and electrolysis instruments.<sup>4,5</sup> Community swimming pools are another significant risk factor for developing molluscum. In fact, the condition was referred to as “the itch of the bath” as early as 1910.<sup>6</sup> The association of MCV with attendance at public swimming pools is thought to be due to fomites present on kick boards, seats, and towels at pool facilities.<sup>7</sup>

MCV can also be sexually transmitted. When this occurs, patients will typically present with lesions in the genital area. MCV genotype 2 is responsible for sexually transmitted molluscum but is usually not detected in children prior to sexual debut.<sup>1</sup> In younger children, genital lesions are also often seen, but these occur secondary to autoinoculation of the virus.

### 3. Molluscum does not occur congenitally.

*Fiction.* Although molluscum is rarely seen in children younger than one year, newer reports suggest that the vertical transmission of MCV is possible. So far, seven reports detail the development of molluscum lesions in infants likely due to the transfer of virus during the birthing process.<sup>8</sup>

### 4. Immunocompetent children tend not to develop this condition.

*Fiction.* Humoral immunity plays an important role in the body’s defense against molluscum infection. Most adults are resistant to MCV infection because they have developed immunoglobulin G antibodies against the viral antigen. However, patients with impaired cellular immunity, such as in AIDS or post-transplant immunosuppression, are more likely to develop widespread infections that are difficult to treat.<sup>9</sup> It has been reported that up to 24.2 percent of patients with molluscum have a concomitant diagnosis of atopic dermatitis, and these children also experience more difficulty in clearance.<sup>9</sup>

While it is true that immunosuppressed patients are more likely to develop more severe MCV infections, recent data have shown that contrary to common belief, the prevalence of immunosuppression



Photo courtesy of Sheila F. Friedlander, MD

Molluscum contagiosum lesions on the neck.

among children with molluscum contagiosum is low. In a cross-sectional study of three tertiary referral centers, no cases of HIV infection were noted among 302 children with molluscum. The fact that immunosuppression is rare in the population of children infected with MCV suggests that HIV infection has less of an impact on the overall epidemiology of molluscum contagiosum than was previously thought.<sup>9</sup>

### 5. Childhood molluscum usually involves multiple sites, whereas adults have more localized disease.

*Fact.* In the pediatric population, patients commonly present with lesions in more than one anatomic region. The trunk is the most frequently involved area, followed by the extremities. Reports of manifestations in the genital area range from 10- 50 percent of infected children.<sup>10</sup> Lesions on the face are less common. Up to 67 percent of infected children present with fewer than 15 lesions, while 6.3 percent manifest more than 30.<sup>9</sup>

### 6. Molluscum contagiosum lesions are asymptomatic.

*Fiction.* Patients with molluscum may complain of itching, burning, or tenderness. Eczematous eruptions have been known to develop around lesions and are reported in more than a third of infected patients.<sup>3</sup> In addition, ocular pain can occur in cases of molluscum on the eyelid. Curtin, et al. found that MCV infection involving the eyelid can result in chronic unilateral conjunctivitis.<sup>11</sup>

### Molluscum Contagiosum: The Basics

- **Etiology.** MCV-1 infection in the US (MCV-2 for STDs)
- **Transmission.** Person-to-person, autoinoculation, fomites, sexually transmitted, congenital
- **Presentation.** Flesh-colored, dome-shaped papules with central umbilication or white curd-like core
- **Differential.** Warts, varicella, intradermal nevi, lichen planus, BCCs
- **Treatment.** Curettage for older children who can tolerate the procedure, localized disease; Cantharidin for younger children, generalized lesions; Cryotherapy, Imiquimod, or Tretinoin cream for facial/periorcular lesions; Topical cidofovir for recalcitrant lesions in children with AIDS
- **Prevention.** Avoid public swimming pools; Bathe infected siblings separately; Don't share towels or bath sponges; Launder towels frequently; Gentle skin care; Wear loose cotton clothing

#### 7. The differential for molluscum is broad.

*Fact.* Warts, varicella, intradermal nevi, lichen planus, and basal cell carcinomas are included in the differential diagnosis of molluscum contagiosum. In the case of chronically immunosuppressed individuals, fungal infections including Cryptomycosis and Coccidiomycosis need to be considered. While the distinctive appearance of molluscum lesions often allows for a clinical diagnosis, several methods can aid in confirmation of uncertain cases.

Viewing lesions under a magnifying lens can help the clinician determine if a characteristic central umbilication is present. Also, scrapings examined under the microscope may reveal discrete, ovoid intracytoplasmic inclusion bodies, also known as molluscum bodies. Tsank smears further distinguish the molluscum bodies, staining them fuchsia-purple; if necessary, lesion biopsy can be performed.

#### 8. Because molluscum is self-limited, no treatment is necessary.

*Depends.* This is a trick, since the answer depends on the number and severity of lesions. Although molluscum lesions typically resolve in six to nine months without treatment, some infections may persist for years. Most physicians recommend that treatment be

initiated at the time of diagnosis because immediate therapy has the best chance of decreasing the number of lesions that develop while minimizing the risk of autoinoculation and spread of infection to close contacts. Treatment has the added benefit of relieving the patient's symptoms and concerns that the patient or caregiver may have. However, if only a few lesions are present and asymptomatic, some caregivers will defer treatment unless persistent.

Common treatments include cantharidin, topical vitamin A derivatives, salicylic acid, potassium hydroxide, imiquimod, systemic cimetidine, cryotherapy, and curettage. While topical tretinoin cream and salicylic acid are effective, they can cause skin irritation and result in hyperpigmentation. Application should cease if erythema develops.<sup>12</sup> According to a recent study comparing four therapies for childhood molluscum (salicylic and lactic acid film, curettage, cantharidin, and imiquimod), curettage is the most effective, resulting in complete clearance of 80.6 percent of patients after only one visit;<sup>13</sup> however, this method can be distressing for young children, may require anesthesia, and is time consuming. Curettage is mainly indicated in older children with localized disease who can tolerate more invasive procedures.

Cantharidin is the next best treatment with 90 percent of patients experiencing clearance and an additional eight percent with improvement after an average of 2.1 treatments.<sup>3,13</sup> This medication is an extract of the blister beetle and acts as a vesicant. It is typically applied to lesions with a small wooden applicator stick and allowed to air dry before being gently washed off four to six hours later. It is the preferred treatment in younger children with widespread lesions who do not tolerate painful procedures. Parent satisfaction with cantharidin is as high as 95 percent, and side effects are minimal.<sup>3</sup> Due to the risk of scarring or eye contamination, cantharidin should not be used for facial or periorcular lesions. Alternative treatments should be considered for such cases.

Cryotherapy via application of liquid nitrogen to a small area with a cotton-tipped swab is an effective, low-cost, and relatively well-tolerated option that can be repeated in three-week intervals. Topical 10% potassium hydroxide, an alkali that dissolves keratin,

is another option for the treatment of molluscum contagiosum. After an average of 54 days, it was reported to have cleared 70 percent of children versus just 20 percent in the placebo group, but nearly all patients reported some mild stinging.<sup>14</sup>

Additionally, immune modulators such as topical imiquimod 5% cream or oral cimetidine can enhance the immune system and have been used to help clear the MCV infection faster, although efficacy has not been confirmed in large studies.<sup>15</sup> Some systemic reactions, including fevers, have been reported to be associated with imiquimod use.<sup>16</sup>

More recent advances in molluscum therapy include pulsed dye lasers (PDLs) and antivirals. PDLs were shown to be effective in clearing lesions after two treatments with good cosmetic results and less down-time. However, this method can be expensive and may not be cost-effective.<sup>17</sup> For children with AIDS who suffer from recalcitrant and widespread MCV infection, topical 3% cidofovir, an antiviral drug with broad activity against DNA viruses, has recently been demonstrated to be effective in clearing lesions.<sup>18</sup>

### 9. Molluscum contagiosum is a benign disease with no adverse sequelae.

**Fiction.** While MCV infection is a benign condition in immunocompetent children, the disease should not be underestimated. Children with molluscum contagiosum can suffer from teasing, embarrassment, and social isolation, while parents and caregivers often experience a great deal of frustration and anxiety over the persistence and spread of lesions.

One study showed that 82 percent of parents of children infected with MCV were moderately to greatly concerned about the condition; most of their anxiety reportedly stemmed from physical manifestations of the condition as well as the discomfort that the child experienced from current treatment methods.<sup>19</sup> To help ensure that as many lesions as possible are treated and eliminated simultaneously, a thorough examination to identify all lesions on an infected child is important.

### 10. MCV infection is preventable.

**Fact.** To limit the transmission of disease, parents

should be advised to avoid taking their children to public bathing or swimming pools, especially during known outbreaks of attendees. Also, children with molluscum contagiosum should be bathed separately from their siblings and should not share towels or bath sponges with other individuals. In fact, any towel an infected child uses should be put immediately into the laundry to prevent re-infection of the child or spread of disease to another family member.

If a child is already infected, gentle skin care with fragrance-free soaps and cleansers is recommended, along with the use of hypoallergenic moisturizers and emollients. Additionally, the child should dress in loose cotton clothing to reduce any skin irritation.<sup>20</sup> ■

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