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Molluscum Contagiosum

Molluscum contagiosum (MC) is a benign viral infection of the skin caused by the molluscum contagiosum virus (MCV), a member of the *Poxviridae* family. The infection typically presents as small, dome-shaped, waxy lesions with a central umbilicated (pit-like) depression. While molluscum contagiosum is generally harmless, it can cause discomfort and cosmetic concerns, particularly in children and immunocompromised individuals. The infection is self-limiting in healthy individuals, but it can persist for several months to years in some cases.

Pathophysiology and Transmission

Molluscum contagiosum is caused by a DNA virus, MCV, which infects the epidermis and leads to the formation of characteristic lesions. The virus is primarily transmitted through direct physical contact, making it highly contagious. In children, MC is most commonly spread via skin-to-skin contact in settings such as daycare or schools. In adults, the virus is often transmitted through sexual contact, particularly when lesions are located in the genital region.

The virus infects keratinocytes, causing hyperplasia and the formation of characteristic lesions that are often asymptomatic. However, in individuals with underlying dermatologic conditions such as eczema, or in those with immunocompromised states (e.g., HIV, organ transplant recipients), the virus can spread more extensively, and lesions may persist longer.

Clinical Presentation

Molluscum contagiosum typically presents as small, firm, flesh-colored or pink papules with a central umbilication. The lesions are generally less than 5 mm in diameter, but larger ones may occur, especially in immunocompromised patients. The lesions are usually asymptomatic but may cause irritation, pruritus, or secondary infection. While molluscum lesions can occur anywhere on the body, they are most commonly found on the face, trunk, and extremities in children, and on the genital area in adults.

The infection is usually self-limiting, with most lesions resolving spontaneously within 6–12 months. However, lesions may persist for up to 5 years in some cases, particularly in those with underlying conditions such as eczema or immunosuppression. Secondary bacterial infections, particularly with *Staphylococcus aureus*, can cause scarring and increase the risk of complications.

Diagnosis

The diagnosis of molluscum contagiosum is primarily clinical, based on the characteristic appearance of the lesions. Histopathological examination can confirm the diagnosis, revealing

characteristic molluscum bodies (cytoplasmic inclusions called Henderson-Paterson bodies) within infected epidermal cells. In cases where the diagnosis is unclear, especially in individuals with atypical presentations, polymerase chain reaction (PCR) testing can be used to detect MCV DNA.

Treatment Options

Although molluscum contagiosum is usually self-resolving, treatment is often sought for cosmetic reasons, to alleviate symptoms, or to prevent spread, particularly in high-risk settings. Various treatment modalities are available, although no single therapy is universally effective for all cases.

- ***Physical Destruction of Lesions***
  - ***Cryotherapy (Liquid Nitrogen)****:* Cryotherapy involves the application of liquid nitrogen to freeze the lesions, causing them to necrose and fall off. This method is effective but may be painful and can lead to scarring or pigment changes, especially in darker skin types.
  - **Curettage**: Curettage involves scraping the lesions off using a specialized surgical instrument. This method is effective for isolated lesions, particularly when cryotherapy is not practical. However, it requires local anesthesia and may cause scarring or discomfort.
- ***Topical Treatments***
  - ***Cantharidin****:* A blistering agent, cantharidin causes the formation of blisters under the molluscum lesions, leading to their destruction. It is applied topically by a healthcare provider, and the lesions typically resolve within one to two treatments. Cantharidin is particularly useful for multiple lesions but can cause skin irritation or blistering.
  - ***Trichloroacetic Acid (TCA)****:* This chemical acid can be applied directly to the lesions to chemically destroy them. Like cryotherapy and cantharidin, TCA is effective but may cause discomfort or irritation at the application site.
  - ***Topical Retinoids (Tretinoin)****:* Tretinoin, a vitamin A derivative, can be applied to molluscum lesions to promote cell turnover and help expel the virus from the epidermis. While effective in some cases, tretinoin may cause irritation, dryness, or peeling of the skin.
  - ***Salicylic Acid****:* This keratolytic agent can be used to treat molluscum lesions by gradually removing the thickened epidermis. It is most effective for small or isolated lesions and may cause mild irritation.
- ***Systemic Treatments***
  - ***Oral Griseofulvin****:* Although primarily used to treat fungal infections, oral griseofulvin has been reported to clear molluscum contagiosum in some cases, especially in patients with extensive or recalcitrant lesions. However, the mechanism of action is unclear, and this approach is not commonly used.
- ***Immunomodulatory Treatments***

- ***Imiquimod**:* Imiquimod, an immune response modifier, has been used off-label to treat molluscum contagiosum, especially in immunocompromised individuals. It works by stimulating the immune system to target and destroy the virus-infected cells. Side effects may include skin irritation or erythema.

Management and Prevention

Molluscum contagiosum is highly contagious, and patients are advised to avoid direct contact with others to prevent transmission. This is especially important in children, who may spread the virus in daycare settings. While the infection usually resolves on its own, individuals with extensive lesions, those with immunocompromising conditions, or those experiencing significant cosmetic concerns should seek treatment.

For individuals with eczema, controlling the underlying condition can help reduce the spread of molluscum lesions. Regular skin care and avoiding scratching or picking at the lesions can also prevent secondary bacterial infections and scarring.

Conclusion

Molluscum contagiosum is a common viral skin infection that is usually benign and self-limited in healthy individuals. However, the virus can cause significant cosmetic concerns and complications, particularly in children and immunocompromised individuals. Treatment options range from physical destruction of lesions (cryotherapy, curettage) to topical therapies (cantharidin, TCA, retinoids), with the choice of treatment depending on lesion size, number, and location. While molluscum contagiosum typically resolves on its own, interventions can speed recovery, prevent transmission, and reduce scarring.

References

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