CASE REPORT

Inflamed molluscum contagiosum in a 6-year-old boy: a case report

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Abstract

The precise prevalence of molluscum contagiosum (MC) is still unknown. The pediatric studies showed a cumulative incidence of 17% in children less than 15 years, but there are no studies available for Romania. The papular skin lesions are generally less than 5 mm, but the immunocompromised patients may develop large uncommon lesions. The pediatric cases are located mostly on the limbs, trunk or the face. The lab investigations are not usually required because the clinical features are typical. A biopsy followed by a light microscopy may help in some cases. We are presenting the case of a 6-year-old boy suffering from MC since almost a year. When examined in our clinic, the child developed 2 to 4 mm dome-shaped flesh-colored papules with central umbilication on his trunk diagnosed as MC. The microscopic examination revealed bud-like proliferation of the epidermis, molluscum bodies and moderate chronic inflammation of the dermis. In about one month of treatment, all the lesions disappeared without other local or general complications.

Keywords: molluscum contagiosum, child, inflammation, epidermal proliferation.

Introduction

Molluscum contagiosum (MC) is a common infection caused by a double-stranded DNA poxvirus affecting both adults and children. The disease affects strictly the skin and the transmission is based on direct contact or sharing towels, baths, clothes and other equipments. The autoinoculation is also frequent and results in linear lesions.

The precise prevalence is still unknown, but there are data from a large UK study [1] stating that the annual incidence is 261/100 000. The pediatric studies [2] showed a cumulative incidence of 17% in children less than 15-year-old.

A study of Popescu et al., in 1999, shows that the incidence of MC infection in Romania was about 0.27% for the group of children between 6- and 12-year-old [3, 4]. The reported incidence is probably lower due to lack of diagnosis.

Many of our pediatric cases were AIDS (acquired immunodeficiency syndrome) related, yet during the last decade the disease abruptly decreased, so the profile of the children suffering from MC is probably similar to the international standards. The association with atopic dermatitis is also controversial: some European studies are in favor [5] whilst other non-European researchers found no correlation [6, 7].

We present the case of a 6-year-old boy infected with molluscum contagiosum that raised positive and differential diagnosis issues.

Case report

We are presenting the case of a 6-year-old boy suffering from MC since almost a year. The child traveled with parents on holiday to one of the Middle East countries and the lesions emerged shortly after returning home. First, there was a single lesion on the right elbow, then, after a couple of weeks, the disease spread on the trunk, hands and buttocks. The parents became concerned and sought medical advice to a local dermatologist who prescribed local measures followed by curettage.

When examined in our clinic (four months later), the child developed 2 to 4 mm dome-shaped flesh-colored papules with central umbilication on his trunk diagnosed as MC. Three weeks later he returned to the clinic with an acute onset of sharply defined, mildly pruritic, erythematous plaques surrounding most of his MC papules (Figure 1).

We collected the tissue for microscopic examination and, after consulting the family, a moisturizer treatment was prescribed. MC and the inflammatory lesions resolved four weeks later.

For histological examination, the harvested skin fragments were immediately fixated in 10% buffered formalin and kept for two days at lab temperature. The fragments were processed in the Laboratory of Histology, University of Medicine and Pharmacy of Craiova, Romania, using the standard paraffin embedding technique. The paraffin blocks thus obtained were sectioned using a Microm microtome to 5 μm thick sections. The standard Hematoxylin–Eosin (HE) and Goldner–Szekely (GS) trichrome stainings were used.
The histopathological examination of the skin revealed epidermal bud-like proliferations in the dermis, formed mainly of cells belonging to the spinous layer surrounded by basal cells. Suprabasal epidermal keratinocytes had oval, unique, eosinophilic inclusions consistent with molluscum bodies. A moderate densification of the cellular component of the dermis, including some chronic inflammatory cells, surrounded these ingrowth lobules. We observed an increased number of blood capillaries in the superficial dermis, immediately underneath the basement membrane of the epithelium, thus explaining the clinical aspect of the lesion (Figures 2–4).

![Figure 1](image1) **Figure 1**– Macroscopic aspect of the papular skin lesions, with perilesional erythema, situated on the posterior thorax.

![Figure 2](image2) **Figure 2**– Skin fragment with dermal bud-like proliferation of the epidermis. HE staining, ×100.

![Figure 3](image3) **Figure 3**– Moderate chronic inflammation in the dermis. GS trichrome staining, ×100.

![Figure 4](image4) **Figure 4**– Skin fragment with moderate chronic inflammation, increased number of blood capillaries in the superficial dermis. GS trichrome staining, ×100.

Discuss the histopathological findings in relation to the clinical presentation.

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**Discussion**

Molluscum contagiosum is a virus belonging to poxviruses family. The virus infects epidermal keratinocytes and viral replication occurs in the cytoplasm of these cells. This infection results in a significant loss of S100 protein-positive dendritic cells in mid and upper layers of overlying epidermis thereby causing local modulation of cytokines and a decrease in the number of Langerhans cells [8]. In our case, the molluscum bodies were present in the suprabasal keratinocytes and in the cells of the epidermal proliferations. In the dermis, we identified the presence of a chronic inflammatory infiltrate, formed mainly of lymphocytes and an increased number of reactive fibroblasts. We also remarked the abundance of blood vessels. Some authors report that in some MC cases there is a dermal inflammation consisting of histiocytes, neutrophils and even giant multi-nucleated cells [9].

Although the MC infection may appear at all ages, numerous studies showed that it affects especially children [10, 11], being facilitated by the collectivity specific crowd. The infection is present all around the world, but most cases were associated with tropical environment, with low developed countries and with special living conditions of some populations [12].

Some authors linked the presence of molluscum contagiosum with an immunosuppressed status of the patient, but in our case, the child had no relevant medical history. Molluscum can also colonize preexistent lesions independently of the immune status [13]. As in our case, MC usually occurs on healthy skin, but it can be associated with different other skin lesions such as epidermal cysts, nevocellular nevi, metaplastic ossifications, soft fibroma, thus making the clinical diagnosis difficult. Studies report a 42.3% accuracy of the clinical diagnosis [13].

The papular skin lesions are generally less than 5 mm, but the immunocompromised patients may develop large uncommon lesions. The pediatric cases are located mostly...
on the limbs, trunk or the face [14], yet in the adult patients, the genitals seemed to be often affected [15].

The lab investigations are not usually required because the clinical features are typical. A biopsy followed by a light microscopy may help in some cases and recent studies are revealing particular aspects in electron microscopy [16, 17].

Most cases of MC are self-limited and without chronic consequences [18]. The treatment varies and the evidence is scarce. The physical approach is based on curettage, laser, cryotherapy or salicylic acid – all of these may be painful or engender scarring [19, 20]. The immune therapies (Imiquimod or Cimetidine) are associated with side effects exceeding the benefits [21, 22]. The main reason for the treatment is the cosmetic appearance or the pruritus. A Cochrane review [23], based on studies lacking statistical power, showed that no single treatment seems to be effective for the cure of MC.

Some researchers noticed that the inflammatory status of the MC lesions may be correlated to the prognosis. The presence of inflammation (clinical and/or histological) may represent a host response that foregoes the cure of a self-limited viral infection rather than a bacterial superinfection needing antibiotic treatment [24].

Conclusions

Our case revealed a child with moderate inflamed molluscum contagiosum for over a year, that had no complications. The histological findings were consistent for the viral infection confirming the clinical presumption. MC and the associated inflammation resolved after four weeks. The clinical and histological signs of inflammation may be misleading prompting for a bacterial superinfection. Often, this reaction is in fact a host response that precedes the cure of the disease. The virus is finally identified as non-self and the inflammatory pathways are activated, leading to the spontaneous remission of the viral infection. The intervention has to be supportive, without antibiotic and/or anti-inflammatory treatment.

Conflict of interests

The authors declare that they have no conflict of interests.

References


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