



CASE STUDY

MOLLUSCUM CONTAGIOSUM: CURE LIES IN THE DIAGNOSIS

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ABSTRACT

Molluscum contagiosum (MC) is a viral infection of the skin caused by a DNA poxvirus called the molluscum contagiosum virus. Although benign, MC can be socially stigmatizing and have an adverse effect on patients' and their families' lives, causing emotional concern and anxiety. Diagnosis is established by histopathological examination demonstrating characteristic molluscum bodies within the keratinocytes correlating with clinical findings. Since the lesions are self resolving in majority of the immunocompetent patients, accurate diagnosis and proper counseling is sufficient at times. We report a case of molluscum contagiosum in a young, immunocompetent female with self resolving nature of the disease which demonstrates the significance of diagnosis and mere counseling to alleviate the anxiety of such patients.

INTRODUCTION

Molluscum contagiosum (MC) is a viral infection of the skin caused by a DNA poxvirus called the molluscum contagiosum virus. MC is spread from direct contact, either via person to person by touching affected lesions or innocuously via fomites. The skin infection is most common in children and sexually active adults. MC can affect any area of the skin, and remains infectious until the lesions have resolved. Most of the lesions usually resolve without any treatment, with the average length of infection lasting between 6 and 18 months. (Hansen and Diven, 2003) Here we discuss a case of molluscum contagiosum in a 36-year-old woman along with a review of aetiology, pathogenesis, histopathology and various treatment modalities.

Case report

A 36-year-old female presented with a three weeks history of eruptive papules over the trunk and chest. It started as several lesions on the lower trunk and then spread over the entire abdomen and chest. Patient had applied topical antibiotic ointments without any improvement in the symptoms. Physical examination revealed numerous skin colored papules ranging

in size from 2 to 5 mm, with prominent central umbilication in few of them (Figure 1). Initial lesions of the abdominal wall showed evidence of healing. Routine hematological and biochemical investigations revealed no abnormality in any of the parameters. HIV 1 and HIV 2 testing were done, and was non-reactive. Family history revealed that she was married and no such lesions were present in her spouse or any other family member. A skin biopsy was performed and immediately fixed in 10% neutral buffered formalin. After processing and sectioning, Hematoxylin– Eosin (HE) staining was performed. The histopathological examination of the skin biopsy revealed hyperplastic epidermis in the form of lobules invaginating into the dermis (Figure 2a). The basal layer showed enlarged basophilic nuclei. Progressing towards the center of the lobule, the spinous cells showed large intra-cytoplasmic, basophilic viral inclusions called molluscum bodies compressing the keratinocyte nucleus (Figure 2b).

Based on clinical presentation and histopathological findings, a diagnosis of molluscum contagiosum was established. Since MC is self-limiting condition and initial lesions had healed without any scarring, patient was counseled about the benign nature of the disease and was explained in detail about methods to halt further spread of the lesions. Two months later, all lesions had resolved.

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Figure 1. Multiple smooth, round and skin coloured papules involving the chest and abdomen with prominent central umbilication

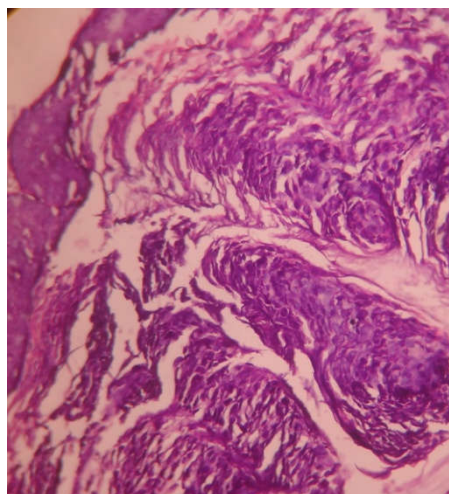
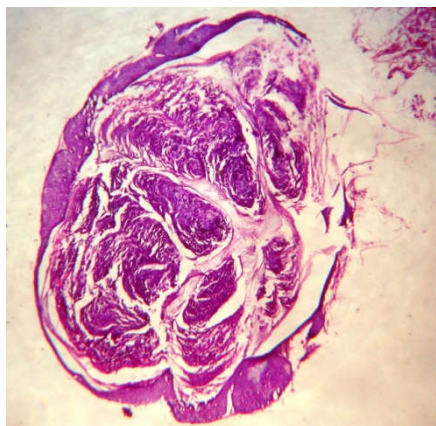


Figure 2 (a) Histopathological examination showing pronounced epidermal hyperplasia with formation of lobules. (H&Ex40) (b)The diagnostic "molluscum bodies" which are large, oval, basophilic, intracytoplasmic inclusion in the keratinocytes (H&Ex400)

DISCUSSION

Molluscum contagiosum is a benign viral infection caused by a virus belonging to poxviruses family and is characterized by the development of flesh-colored, dome-shaped papules on the skin or mucous membranes. The entity was first described by Bateman in 1817. (Bateman, 1953) The infectious nature of the condition was demonstrated by Juliusberg in 1905 by inoculating himself and two colleagues with the ground-up contents of multiple molluscum contagiosum lesions. (Juliusberg, 1905) Molluscum contagiosum virus (MCV) is of four types; MCV I to MCV IV of which MCV I is most prevalent and MCV II is usually seen in adults. (Basak and Rajurkar, 2013) Molluscum contagiosum is a common infection. Although the worldwide incidence was once estimated to be between 2% and 8%, recent seroprevalence studies suggest that the true incidence is much higher. (Sherwani *et al.*, 2014) Indeed, the true prevalence of MC has probably been underestimated because of the benign clinical manifestations and rare complications. Lesions are most frequently observed in young children and immunocompromised adults, particularly those with human immunodeficiency virus. Children tend to have lesions on their trunk, limbs, or face. In adults, lesions generally occur on the genitals, inner thighs and abdomen as transmission is associated with close sexual contact. (Hughes *et al.*, 2013) Skin lesions typically present as asymptomatic, dome-shaped, flesh-colored papules. They generally range in size from 1 to 5 millimeters in diameter, although lesions as large as 1.5 centimeters in diameter have been described in immunocompromised patients. (Schwartz and Myskowski, 1992) Children with atopic dermatitis may have higher numbers of MC lesions and an increased likelihood of molluscum dermatitis. (McCollum *et al.*, 2014) MC patients typically have 1–20 lesions, although even healthy patients may have a hundred or more lesions. A central area of umbilication is a distinguishing feature of molluscum contagiosum papules. Multiple lesions are usually present, but solitary papules are not uncommon. Rarely, patients have described their lesions to be pruritic or tender. Our patient also had pruritus which probably led to spreading of the lesions.

The virus infects epidermal keratinocytes and viral replication occurs in the cytoplasm of these cells. This infection results in a significant loss of S-100 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. (Smith *et al.*, 1999) MCV causes persistent skin lesions filled with live virus, but these are generally immunologically silent, suggesting the presence of potent inhibitors of human antiviral immunity and inflammation. (Brady *et al.*, 2015) Histologically, molluscum contagiosum is characterized by markedly swollen keratinocytes containing large molluscum bodies -- dense, oval-shaped, basophilic, intracytoplasmic inclusions. Prominent acanthosis is also common. Notably, the molluscum body is among the largest known viral structures in human histopathology. Indeed, it is often so large that it compresses the keratinocyte nucleus or displaces it to the periphery of the cell. (Kumar *et al.*, 2010) In our case, the molluscum bodies were present in the suprabasal keratinocytes and in the cells of the epidermal proliferations.

Diagnosis of the lesion is presumptively based on the distinctive, central umbilication of the dome shaped lesion, and confirmed by histopathological examination.

Although benign, MC can have an adverse effect on patients' and their families' lives, causing emotional concern and anxiety about physical manifestations of the infection. MCV is spread by contact with lesion material from an affected individual. Recommendations to prevent the spread of MCV on an individual's body or to others may include keeping the lesions covered and not sharing clothing, linens, or items that may contain lesion exudate with others. Also, avoiding any behavior that would open the lesion and spread the material, such as shaving scratching, and electrolysis, is recommended to prevent spread of the virus. (McCollum *et al.*, 2014) 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. In a 2006 study comparing four recognized treatment modalities of molluscum contagiosum, researchers concluded that curettage was the most efficacious treatment and had the lowest rate of adverse effects. (Hanna *et al.*, 2006) The immune therapies (Imiquimod or Cimetidine) are also associated with side effects exceeding the benefits. (Mosher and Lio, 2012) The lesions may resolve spontaneously within 18 months, although it is not uncommon for them to persist for many months, or even years, particularly in immunocompromised individuals.

Conclusion

Though clinical appearance of the lesion is sufficient for the diagnosis, histopathological examination of the excised tissue can be an adjuvant aid in the diagnosis of Molluscum contagiosum. Accurate and timely diagnosis along with proper treatment is helpful to alleviate the anxiety of the patient and to prevent the spread of the lesions and complications.

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