

A Histopathological Approach to a Case of Recurrent Genital Molluscum Contagiosum

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Abstract:

Molluscum contagiosum (MC) is a harmless, viral skin infection with a high transmission risk. The Molluscum contagiosum virus (MCV) has two primary forms: type 1 and type 2. Sexually transmitted MC affects the anogenital region, encompassing external genital organs, inner thighs, inguinal folds, and suprapubic areas. The likelihood of MC recurring after treatment can reach up to 35 percent. Transmission primarily occurs through direct physical contact. A 29-year-old man who complained of bumps on the pubis and penile shaft for 3 months accompanied by itching. Venerological examination revealed multiple, round, dome-shaped erythematous papules with central umbilication on the pubis and penile shaft. On punch biopsy, the epidermis appears with hyperplastic squamous cell epithelium with a cup shape containing *Handerson-Peterson bodies*. The condition of recurrent, atypical, and mimicking lesions with condyloma lata lesions means that diagnosis in this patient requires a histopathological examination.

Keywords: Recurrent molluscum contagiosum; *Handerson-Peterson bodies*; Sexually transmitted infection.

Introduction

Molluscum contagiosum (MC) is a self-healing, infectious dermatosis that occurs frequently in pediatric populations, sexually active, and individuals with a weakened immune system. Molluscum infection is a harmless, skin eruption caused by the Molluscum contagiosum virus, which is part of the Poxviridae family and the Molluscipox genus. Genital molluscum contagiosum focuses on infections involving the genital area and is sexually transmitted. Transmission typically results from direct physical contact. In adults, the most common method of transmission is through direct skin to skin contact during sexual intercourse.^{1,2,3}

A 2014 meta-analysis of cross-sectional surveys revealed that the overall prevalence of MC among children ranged from 5.1 to 11.5%, with regions having warm climates being the most affected. In adults, MC is predominantly observed in individuals with underlying immunodeficiency conditions, such as HIV, or sexually transmitted infection in immunocompetent individuals. The recurrence rate of MC after treatment can be as high as 35 percent.^{1,4}

The diagnosis of genital MC is largely clinical based on characteristic lesions. Usually, clinical diagnoses may be a challenge because the presentation usually differs, and the use of dermoscopy may offer benefits in supporting the diagnosis. However, dermoscopy is not routinely available in sexual health facilities. Examinations such as biopsy can support establishing the diagnosis of atypical lesions, recurrent infections, and immunocompromise because the histopathological depiction has distinctive characteristics. The condition of recurrent MC lesions with a suspicion of mimicking condyloma lata lesions necessitates a histopathological examination for the diagnosis in this patient.³

Case

A 29-year-old male complaining of bumps on the pubis and penile shaft. The bump on the pubis and pubic shaft was first felt 3 months ago. Initially, the first two bumps appeared on the pubis, the size of corn kernels in the pubic area, in the form of white flat spheres with a smooth surface. Complaints were accompanied by itching with a VAS of 2/10 and without pain. The patient had previously experienced similar complaints 4 years previously and underwent self-treatment by applying ointment he purchased himself. For the complaint of bumps, the patient currently has not received treatment and has not applied anything. The patient has never had the human papillomavirus (HPV) vaccine before. The patient's family did not report similar complaints.

The patient is not married but has been sexually active for the past 5 years. The patient is heterosexual and has a history of multiple sexual partners. The sexual activities with his partners have never involved the use of condoms genito-genitally and orogenitally. The last sexual activity was 2 months before the bumps appeared. A history of sexual activities with female sex workers was denied, but the patient has changed girlfriends 8 times in the past 5 years. The patient's hygiene history includes routinely changing underwear twice a day after taking showers. A history of exchanging underwear was denied.

A general status examination showed that the patient appeared mildly ill with a GCS of 456. His pulse was 112 x/minute, respiratory rate was 22 x/minute, temperature was 38 °C, and oxygen saturation was 99% with room air. The patient's weight was 80 kg. On physical examination, there were enlarged lymph nodes in the submental region, right left axilla, and left right inguinal.

Venereological status examination revealed multiple erythematous papules with well defined, irregular edges, a smooth

surface, and a round shape, with a dome shape and central umbilication, measuring 0.3–0.5 cm in the pubic region and penile shaft.

Tzanck examination, intracytoplasmic molluscum inclusion bodies were found. A dermoscopy examination revealed a yellowish-white central polylobular with an amorphous structure. The result of the acetowhite test was negative. VDRL, TPHA, and anti-HIV laboratory tests were non-reactive in this patient.

Punch biopsy examination was performed, which was obtained from the papular lesion in the pubic area. The result showed that the epidermis appeared hyperplastic; the preparation appeared to have lobes separated by the epidermis, which appeared hyperplastic.

At x400 magnification, there was a dome containing Handerson-Patterson bodies with a visible polygonal core and eosinophilic inclusion bodies at the edges. It was concluded to be molluscum contagiosum.



Figure 1 The Venereological Status. The image shows multiple erythematous papules with well define, irregular edges, a smooth surface, and a round shape, with a dome shape and central umbilication on penile shaft and pubic region.

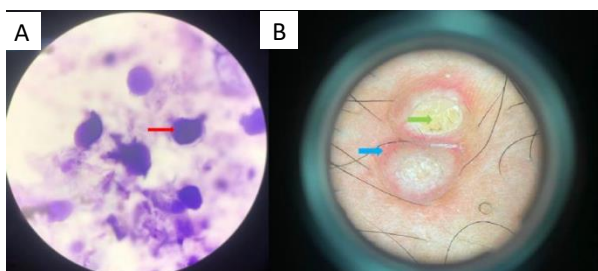


Figure 2 Supporting Examination. (A) A Tzanck examination reveals intracytoplasmic molluscum inclusion bodies (Giemsa, x1000). (B) A dermoscopic examination revealed a yellowish-white central polylobular (green arrow) with an amorphous structure (blue arrow).

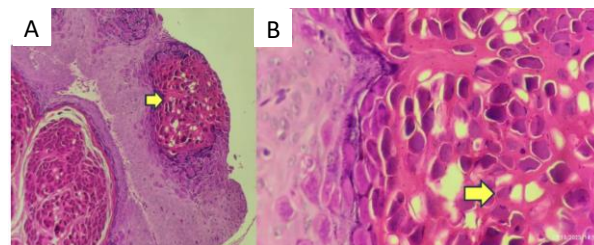


Figure 3 Punch Biopsy Examination. (A) A cup-shaped image consisting of molluscum body cells *Handerson-Peterson bodies* that are visible (H&E, x100). (B) *Handerson-Peterson bodies* with the cytoplasmic nuclei of eosinophilic inclusion bodies (H&E, x400).

The patient was diagnosed with genital MC; the treatment for the lesion was excochleation. Post-excochleation wounds were treated openly with a gentamicin ointment applied twice a day. The patient was planned for another check-up 1 week after the excochleation procedure.

During the follow up, 1 week after the excochleation procedure, clinical improvements were found and there were no new lesions. The scar has become an erythematous patch covered with a blackish scale.

Discussion

Molluscum contagiosum (MC) is a self-healing, infectious dermatosis that occurs frequently in pediatric populations, sexually active adults, and individuals with a weakened immune system. Molluscum contagiosum lesions are benign skin eruptions caused by an infection of a large DNA virus from the *Poxviridae* family and *Molluscipox* genus. Genital molluscum contagiosum specifically targets infections in the genital area and is transmitted sexually.¹

In adults MC is most commonly seen in immunodeficiency conditions, especially HIV, or as a sexually transmitted infection in immunocompetent individuals. MC infection in men and women occurs more often in the age group of 20–30 years and in women aged less than 20 years. Genital transmission of MC may be through several sources, including direct contact through sexual intercourse, fomites through objects such as underwear, and self inoculation.^{1,3}

This is in line with the patient's age in the case report, which was 29 years. The patient did not have an immunodeficiency condition, but the transmission in this patient originates from a sexually transmitted infection. The patient also had previously experienced similar complaints 4 years previously, recovered totally after applying ointment he purchased himself.

The Molluscum contagiosum virus (MCV) comprises two primary subtypes (types 1 and 2), which account for nearly all lesions, although genotypic analysis has also identified less common subtypes. Type 1 is the most prevalent, with varying distribution across different geographic regions. However, subtype 2 MCV is slightly more common in genital lesions.^{3,5,6}

MC lesions are characterized by small (2–8 mm), pearl-like, dome-shaped, skin-colored papules with a central umbilication. They can appear solitary, but the disease typically manifests in groups averaging 11 – 20 lesions. Immunocompromised patients or those with atopic dermatitis may experience multiple and diffuse MC lesions. The lesions usually show no symptoms, but some patients may complain of tenderness or pruritus. Sexually transmitted molluscum contagiosum involves the anogenital area, including external genital organs, inner thighs, inguinal folds, and suprapubic areas.^{7,8,9,10}

In the patient, the lesions were located in the genital area, and this is in accordance with the risk factors for sexual contact with

multiple sexual partners. Complaints in the form of bumps on the pubis and penis shaft appeared 3 months ago. Initially, the first two bumps appeared on the pubis, the size of corn kernels in the pubic area, in the form of white flat spheres with a smooth surface. Complaints were accompanied by itching with a VAS of 2/10 but without pain.

Unclear cases can be confirmed through histological examination, polymerase chain reaction, or electron microscopy. Histological examination of molluscum lesions reveals a distinctive pattern known as the "nuts in a sack" appearance. Histopathological changes in the epithelium are observed in MC; basal keratinocytes show prominent nucleoli, amphophilic cytoplasm, and clear cytoplasmic vacuoles. Well-formed molluscum bodies are present in the center of the lesion. Epithelial changes take place in the initial period, without the presence of molluscum bodies.^{3,10}

In this case a dermoscopic examination is carried out due to recurring lesions. The results of the histopathological examination suggested that the epidermis appeared hyperplastic, and the preparation appeared to have lobes separated by the epidermis, which appeared hyperplastic. There is a dome containing Henderson-Patterson bodies with a visible polygonal core and eosinophilic inclusion bodies at the edges. It was therefore concluded as molluscum contagiosum.

Therapy indications include patient preference, extensive involvement, persistent disease, cosmetic concerns, fear of disease transmission, scarring, and symptoms or complications such as sexually transmitted infections, pruritus, inflammation, and secondary infections. While active treatment of molluscum contagiosum can shorten healing time, it must be weighed against the discomfort and side effects, particularly on sensitive genital skin.^{3,12,13,14}

Current physical treatments for genital molluscum include cauterization, curettage,

and liquid nitrogen cryotherapy. Cauterization is simple and fast to administer, offering quick results. Other reported topical chemical treatments for non-genital molluscum include salicylic acid, glycolic acid, lactic acid, trichloroacetic acid, benzoyl peroxide, hydrogen peroxide, iodine, potassium hydroxide, silver nitrate, cantharidin, nitric oxide, lemon myrtle oil, tea tree oil, tretinoin, and adapalene, though their effectiveness varies and none are specifically indicated for genital infections. Podophyllotoxin can be applied to patients with molluscum lesions by applying it twice daily for three consecutive days, followed by a four-day break, and repeated as needed until the lesions clear up.¹⁵

The management in this patient's treatment involved the curettage method with excochleation according to the patient's preference, who wanted fast therapeutic results. An evaluation on the 7th day after the excochleation procedure showed that the wound was healing well, though there was still inflammation in the form of an erythematous patch in the perilesional area and there were blackish crusts.

Conclusions

Recurrent Molluscum contagiosum is a sexually transmitted infection that easily recognized clinically. The genital manifestations of MC often resemble sexually transmitted infectious lesions such as condyloma lata and condyloma acuminata. The significance of MC may be underestimated, which is why patients come to health facilities after having been infected for a long time and the lesions found have changed from the initial lesions, making diagnosis a challenge. The simplest diagnosis of molluscum contagiosum is by a physical examination of the dermatological status with a typical appearance in the form of a papule with a central umbilication and a dome shape. Histopathological examinations can be carried

out if the lesion is not significant enough to lead to the diagnosis of MC. Hopefully, this study will be able to provide a guideline for diagnosing molluscum contagiosum lesions with atypical clinical features.

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