Giant Molluscum Contagiosum with Concurrence of Molluscum Dermatitis

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Molluscum contagiosum is a common disease encountered by dermatologist. However, there are some atypical presentations rarely encountered in daily practice and thus a correct impression difficult to make. We proposed the first case reported in Taiwan, a 31 year-old female, with the atypical presentation of a 1.5 X 1.5 cm solitary nodule with underlying erythematous base at left medial thigh, which pathologically proved to be a giant molluscum contagiosum with molluscum dermatitis. We made a brief review of previously reported cases in the English literature and possible mechanisms of the atypical clinical and pathological presentation. We also raised the importance of including molluscum contagiosum when encountering clinical simulants and general survey of immune status.(Dermatol Sinica 23: 81-85, 2005)

Key words: Molluscum contagiosum, Giant molluscum, Molluscum dermatitis

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Accepted for publication: December 06, 2004
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molluscum dermatitis, which should be carefully managed and surveyed.

**CASE REPORT**

A 31-year-old female, pregnant for 2 months, visited our out-patient clinic with the complaint of a solitary asymptomatic erythematous nodule over her left inner thigh for half a year. She denied underlying systemic diseases, atopic diathesis, drug, trauma or animal contact history. She noticed the nodule accidentally with the initial presentation of a 0.3 X 0.3 cm flesh-colored papule and it gradually enlarged in recent three months. There was no discharge, erosion, or ulceration. She also denied sense of tenderness but only mild itch.

Physical examination at our clinic revealed a large solitary 1.5 X 1.5 cm dome-shaped nodule with underlying erythema without demarcated border (Fig. 1). Palpation of inguinal area did not reveal any lymphadenopathy. There was no abnormal skin lesion around inguinal and genital area. Under the impression of skin tumor with differential diagnoses of verruca, dermatofibroma, keratoacanthoma, malignancy or other inflammatory or infectious diseases, we performed total excision of the skin tumor and sent the specimen for pathologic examination.

Under the microscope, the intact epidermis showed mild hyperkeratosis, variable acanthosis without erosion or ulceration. The lesion was totally intradermal (Fig. 2). Medium power view showed lobules of epidermal cells with some eosinophilic materials encased by dense inflammatory infiltrate. High power view revealed numerous enlarged keratinocytes with intracytoplasmic eosinophilic inclusion bodies which compressed the nucleus of keratinocytes into a thin crescent, characteristic of molluscum bodies, with mixed cell infiltration engulfing the tumor (Fig. 3a, b). Perivascular mixed cell infiltrate was also noted diffusely down to deep dermis. Under the clinical presentation of a solitary skin nodule without history of discharge or ulceration, and the pathologic presentation of intracytoplasmic inclusion bodies, the diagnosis of giant molluscum contagiosum was given. The clinical underlying erythema and the pathological findings of diffuse perivascular infiltrate further establish the diagnosis of molluscum dermatitis.

We further performed laboratory examination including complete blood with differential counts, liver and renal function, sugar level, immunoglobulin levels, subsets of lymphocytes, and the detection of HBV, HCV, HIV infection, which all showed negative results or results within normal limits. We also examined her family members, including her husband, who was not infected, and her two childrens, both with scattered flesh-colored tiny papules with central umbilication over the trunk and extremities, which were further diagnosed molluscum contagiosum. The patient’s lesion was margin
free under microscopic examination so we suggested further observation and follow-up. We also arranged cryotherapy for her children.

DISCUSSION

Molluscum contagiosum (MC) is a common, benign, viral transmitted disease caused by a double-stranded DNA poxvirus, molluscum contagiosum virus (MCV) which replicates in epidermal cells and produces characteristic cytopathic effects on biopsy. It typically presents as variable numbers of small, discrete, waxy, skin-colored, dome-shaped papules with central umbilication, and involutes spontaneously in immunocompetent patients. Histopathologically, it shows epidermal cells contain intracytoplasmic eosinophilic structures termed molluscum bodies. There are usually paucity of inflammatory and immune response even in lesions of immunocompetent patients. It is explained by the MCV genome which may interfere with immune recognition and host defense mechanisms include (1) a major histocompatibility complex class I heavy chain homologue that may inhibit presentation of MCV-specific peptides, (2) a chemokine homologue that may inhibit inflammation, and (3) a glutathione peroxidase homologue that may protect the virus and infected cells from oxidative damage by peroxides, which may form in response to infection.1-3

There are some features worth noticing in our patient: first, the atypical clinical presentation of a solitary giant lesion; second, the intradermal mass with intact epidermis despite further deep-cuts and the unusual dense mixed cell inflammatory infiltrate around the molluscum contagiosum lesion.

Rarely the molluscum lesion may become as large as 1 cm or more. This giant type solitary lesion was reported on the sole,4-5 eyelid,6 or scalp7 and causes difficulties in differentiating with keratoacanthoma, verruca vulgaris, basal cell carcinoma,8 and other inflammatory, infectious, or neoplastic diseases. It has been reported with increased incidence recent years with the association with HIV infection9-12 and immunocompromised status.8,13 Cribier B et al. had retrospectively reviewed 578 cases of molluscum contagiosum diagnosed under pathologic examination. They found only a 42% proportion of correct clinical diagnosis. Although the exact incidence of giant molluscum contagiosum has not been established, they found 8 giant molluscum contagiosum (1.6%) in this large series study with 2 of them occurring in HIV positive patients. None of them was a correct clinical diagnosis made initially.14

Cribier B et al. also concluded that giant molluscum contagiosum often assumes an endophytic and cystic-like growth pattern, which should not be confused with an epidermal cyst. The intradermal growth may be explained by various proposed mechanisms, including (1) a section of epidermis carrying the MCV may be carried down to the dermis as the result of trauma and there to form an implantation, (2) the virus may involve the pilar infundibulum, which subsequently closes to form an inclusion cyst, and (3) when regression, the acute inflammatory response caused by delayed-type hypersensitivity reaction induces disruption of virus-infected epidermal tissue and further implantation into the dermis.15-18 The nature of primarily follicular involvement may be supported by areas of hair bulb or sebaceous glands differentiation, or the presence of arrector pili muscles at the periphery of a molluscum.

Fig. 3
(a) Characteristic intracytoplasmic molluscum bodies within the tumor nodules; (b) with diffuse mixed cell inflammatory cell infiltrates. (H&E, 400X)
contagiosum lesion. It has been suggested the molluscum contagiosum induces follicular neo-
genesis or preferentially colonizes the infundibulum of normal follicles. It is therefore not suprising to observe follicular cysts colon-
ized by molluscum contagiosum virus.\textsuperscript{19}

In our patient, although there was no evi-
dence of intact peripheral follicular structures, sebaceous glands, or arrector pili muscles in serial sections, we suspected it was obscured by dense surrounding inflammatory infiltrates, possibly during regression phase.

There are also several explanations of possible mechanisms of inflammatory response to intradermal molluscum. One thought is com-
parable to inflammatory reactions in a ruptured epidermal cyst as the epidermis is carried down into the dermis. The delayed-type inflammatory reaction involved in regression, also called “molluscum dermatitis”, clinically presents as areas of eczema around the molluscum papules, and histologically presents as dense infiltrate\textsuperscript{20-23} occasionally mimicking pseudolymphoma,\textsuperscript{24} which could be misdiagnosed if serial sections were not made to visualize the molluscum bod-
ies.\textsuperscript{24-26} These are thought to be due to the dis-
charge of molluscum bodies to the dermis, fol-
lowed by the release of proinflammatory cytokines and activation of the complement pathway.\textsuperscript{27} In about 10\% of cases with classical molluscum contagiosum, particularly in atopic subjects, molluscum dermatitis, usually presents as an erythematous patch a month or more after the onset of molluscum contagiosum.\textsuperscript{21, 23} It may sporadically develops in the form of erythema annulare centrifugum,\textsuperscript{28} erythema multiforme-
like,\textsuperscript{29} or ephyma-like lesions\textsuperscript{29} around the mol-
luscum papules. In contrast to molluscum der-
matitis, which develops immediately around the molluscum papules, a so called “id reaction” has been reported in a few cases, in which eczematoid lesions occurred “separately” from the viral papules. Moreover, clinically these lesions of id reaction may simulate erythe-
ma multiforme, erythema nodosum, erythema annulare centrifugum, lichen sclerosus, dyshidritic eczema, seborrheic dermatitis, lichenoid and sarcoi-d-like lesions.\textsuperscript{30}

Atypical lesions of molluscum contagio-
sum, often reaching great size as giant lesions\textsuperscript{10} or mimicking other lesions such as sebaceous nevus of Jadassohn, ephyma, giant condylomata acuminata,\textsuperscript{29} basal cell carcinoma,\textsuperscript{6} soft fibro-
mas, can be seen in immunodeficiency condi-
tion, such as atopy, corticosteroid and immuno-
suppressive therapy, leukemias, and AIDS.\textsuperscript{11} Because of HIV-infected patients feature mol-
luscum contagiosum with atypical morphology in about two thirds of the cases, it is important for all the tumorous lesions to be biopsied in AIDS patient and also important for all the patients with atypical molluscum contagiosum to be screened of immune status. All the immunoglobulin levels, subsets of lymphocyte counts, and HIV, HBV, HCV screening in our patient were all normal. Although some authors proposed that abnormal immune system ascribed to pregnancy, chronic viral hepatitis, or malignancies have played a part in the develop-
ment of molluscum folliculitis,\textsuperscript{19} the association of pregnancy and giant molluscum has not been well established. Further observations with more cases may be necessary in elucidating the possible relationship.

Currettage is the treatment of choice. Applications of cantharidin, liquid nitrogen, trichloroacetic acid, silver nitrate, topical retinooids, imiquimod, and cidofovir are alterna-
tives.\textsuperscript{7, 9} Our treatment was simply total excision due to the initial impression of skin tumor with suspected intradermal component. The erythema faded spontaneously after two weeks follow-up.

We here describe a case of giant mollus-
cum contagiosum with concurrence of mollus-
cum dermatitis, demonstrate the atypical clinical and histopathological presentations, and briefly review the English literature. Molluscum contagiosum infection should be considered in even a giant solitary and pathologically abscess lesion. Serial sections are always necessary. Further investigation is mandatory as this may occur in immunocompetent subjects but is also one of the cutaneous signs of underlying immune deficiency such as HIV infection.
REFERENCES