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Case reports

Intralesional Candida Antigen Immunotherapy for Refractory Molluscum Contagiosum in an Immunocompetent Adult

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Molluscum contagiosum is a poxvirus-induced skin infection that typically resolves spontaneously but may persist and become refractory in adults. We report a 38-year-old immunocompetent male with over 40 lesions on the trunk, forearms, and pubic region, persisting for 18 months despite cryotherapy, topical potassium hydroxide, and curettage. Intralesional Candida antigen was injected into three representative lesions every three weeks for four sessions. Regression occurred in both injected and non-injected lesions, with complete clearance by week 12 and no recurrence during 9 months of follow-up. Only mild transient local pain and erythema were reported. This case demonstrates that intralesional Candida antigen immunotherapy is a safe, low-cost, and effective option for refractory molluscum contagiosum, providing durable clearance and high patient-reported satisfaction.

INTRODUCTION

Molluscum contagiosum (MC) is a benign viral infection of the epidermis caused by molluscum contagiosum virus, a double-stranded DNA virus in the Poxviridae family. Infection spreads through direct contact with infected people or objects.[1] MC typically presents as multiple, dome-shaped, umbilicated papules and affects children, sexually active adults, and immunosuppressed individuals.[2] While MC is often self-limiting and resolves spontaneously within 6–18 months, persistence for several years is well documented, particularly in adults.[2]

Treatment is usually sought for cosmetic reasons, to reduce transmission, or when lesions are numerous, persistent, symptomatic, or complicated by eczema or secondary bacterial infection.[3] Conventional destructive methods include cryotherapy, curettage, electrodessication, and topical agents such as potassium hydroxide, cantharidin, trichloroacetic acid, and topical retinoids.[4] These treatment modalities have numerous side effects and are not optimal for recalcitrant or recurrent skin lesions.[5]

Intralesional immunotherapy has emerged as a promising alternative, inducing a cell-mediated immune response that targets both treated and distant lesions. The treatment not only targets the treated lesion but also distant lesions through a "bystander effect".[6] Candida antigen is one of the most extensively studied recall antigens, showing complete clearance rates ranging from 50% to 90% in several studies .[7,8] Other agents such as MMR vaccine and PPD have been tried with varying success.[9]

A recent comparative trial demonstrated that intralesional Candida antigen was as effective as 10% topical potassium hydroxide but with the added benefit of clearing untreated lesions with less irritation and a lower recurrence rate.[10] Another study showed that immunotherapy significantly reduced the number of treatment sessions relative to cryotherapy.[11] The therapy is generally well tolerated with no serious side effects; however, transient discomfort like pain and pruritus was reported at the site of injection.[11]

This case report describes a refractory case of MC in an immunocompetent adult that achieved complete clearance following intralesional Candida antigen immunotherapy, highlighting the potential clinical benefits of this approach in difficult-to-treat cases and its role in reducing the recurrence rate.

CASE PRESENTATION

A 38-year-old previously healthy male presented with an 18-month history of gradually progressive multiple small clustered papular lesions. They were first noticed prominently over the lower abdomen as 4-5 clustered papules, which increased in number over 3–4 months and subsequently scattered into the trunk mostly, chest, and less prominently the forearm and pubic region. There were no notable changes in size, color or other morphological features. The lesions were mostly asymptomatic, apart from intermittent mild pruritus triggered by tight clothing and sweating. The patient sought medical attention primarily due to cosmetic concerns and fear of potential transmission to his spouse.

His medical history was otherwise unremarkable, with no diabetes mellitus, immunodeficiency, or chronic illness. On presentation, his vital signs were within normal limits: blood pressure 122/78 mmHg, heart rate 76 bpm, respira-

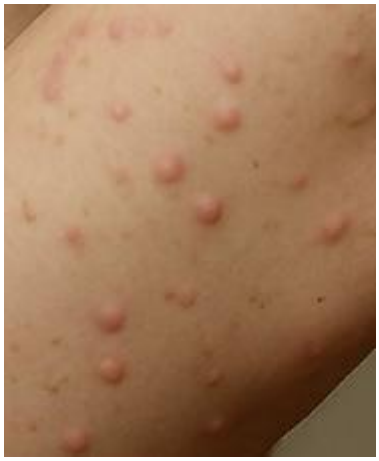

Figure 1. Baseline clinical image showing multiple dome-shaped, umbilicated papules (2–4 mm) on the trunk and forearms.

tory rate 16/min, and temperature 36.7°C. He denied contact with known infected individuals, sharing personal equipment, engaging in high-risk sexual behaviour, or having previous sexually transmitted infections. He also reported no recent laser procedure, use of public swimming pools, or significant exposure to foreign materials and chemicals. There was no previous similar history, and no other family members complained of the same papules.

He had received multiple treatments prior to presentation. He received three sessions of cryotherapy (10-15 seconds per lesion per session) that produced minimal response with recurrence within two months. This was followed by a four-week course of topical 5% potassium hydroxide, which caused local irritation with minimal benefit. Then some selected lesions were treated with curettage, resulting in temporary clearance; however, new lesions developed within weeks.

On physical examination, there were approximately 45 discrete, dome-shaped, pearly skin-colored papules with central umbilication, each measuring 2–4 mm in diameter. Lesions were symmetrically distributed across the trunk, forearms, and pubic region, sparing his face, soles, palms, and genital mucosa (Figure 1). No surrounding erythema, tenderness, discharge, or other sites of inflammation were noted. Regional lymph nodes (axillary and inguinal) were not palpable. Systemic examination, including nails and hair, was unremarkable.

Laboratory investigations confirmed immunocompetence with all parameters (Table 1). Based on the characteristic clinical features and prior treatment failures, a diagnosis of molluscum contagiosum was established.

Intralesional Candida antigen immunotherapy was initiated using a four-session treatment protocol, with 0.1 mL antigen injected into three representative lesions per session, at three-week intervals. The patient experienced only mild local adverse effects, including transient pain and erythema after the first injection, which resolved within 48 hours. Progressive regression of both injected and distant lesions was observed during therapy, with marked improvement after the second session. By week 12, all lesions had completely resolved. Follow-up at three, six, and nine months confirmed sustainable clearance, normal skin texture, and absence of scarring or recurrence (Table 2). The patient reported high satisfaction with the treatment and no systemic adverse effects.

DISCUSSION

Molluscum contagiosum is a poxvirus-mediated cutaneous infection that typically resolves spontaneously within six to twelve months in immunocompetent individuals.[12] In adults, however, lesions may persist, become widespread, and show poor response to conventional therapies such as cryotherapy, curettage, or topical keratolytics.[13] Recurrence and treatment-related pain or scarring are common with destructive approaches, emphasizing the need for safer and more effective options.[14,15]

Intralesional immunotherapy represents a promising alternative, activating the host immune system to induce regression of both treated and distant lesions.[16] Among available antigens, Candida albicans is one of the most widely studied, acting as an immunomodulator that stimulates a robust cell-mediated response and clears injected as well as uninjected lesions.[16] The bystander effect is believed to result from systemic activation of T-helper 1 lymphocytes and cytokine-mediated antiviral responses.[17] Several studies have documented high clearance rates, minimal adverse effects, and sustained responses following intralesional Candida therapy in both pediatric and adult patients.[17]

Our patient had persistent, treatment-resistant lesions that failed cryotherapy, topical potassium hydroxide, and curettage. Intralesional Candida antigen led to progressive regression of injected and distant lesions, complete clearance by week 12, and no recurrence during nine months of follow-up. Only mild, transient pain and erythema were reported, consistent with prior literature.[18] This case illustrates the potential of intralesional immunotherapy as a safe, cost-effective, and non-destructive option, particularly when lesions are numerous or cosmetically significant.

This report is limited by its single-patient design, lack of histopathological confirmation, and absence of direct comparison with other modalities. Durability beyond nine months remains uncertain. Future controlled studies are needed to define standardized dosing regimens, session intervals, and predictors of response in adults.

CONCLUSION

Refractory molluscum contagiosum in immunocompetent adults is still a therapeutic challenge, particularly if standard destructive or topical treatments fail. In the context of existing literature on Candida antigen immunotherapy for molluscum, this case illustrates that intralesional Candida antigen immunotherapy can be an effective, safe, and minimally invasive option, achieving complete lesion clearance, long-term remission, and excellent cosmetic results. This approach stimulates the immune system to recognize and eliminate the virus, with the outcome being the resolu-

Table 1. Baseline laboratory investigations confirming immunocompetence. Abbreviations: WBC, white blood cell; HIV, human immunodeficiency virus; CD4, cluster of differentiation 4.

Parameter	Result	Reference Range
Hemoglobin	14.6 g/dL	13.5–17.5 g/dL
WBC Count	7.8 × 10^3/μL	4.0–11.0 × 10^3/μL
Neutrophils	62%	40–70%
Platelets	256 × 10^3/μL	150–450 × 10^3/μL
Fasting Blood Glucose	96 mg/dL	70–110 mg/dL
Liver Function Tests	Normal	—
Renal Function Tests	Normal	—
HIV 1/2 Antibody/Antigen	Negative	—
CD4 Count	790 cells/μL	>500 cells/μL

Table 2. Therapeutic Progression and Follow-Up Outcomes of Intralesional Candida Antigen Treatment. Clinical course of lesion regression and treatment-related adverse effects over four treatment sessions and subsequent follow-up.

Week	Session Number	Approx. Lesion Count	Clinical Findings	Adverse Effects
0	Baseline	~45	Multiple dome-shaped umbilicated papules	None
3	1st Injection	~40	Flattening of some untreated lesions	Mild local pain at injection sites
6	2nd Injection	~20	>50% clearance; several lesions crusted	Mild erythema and pruritus
9	3rd Injection	7	Near-total regression	None
12	4th Injection	0	Complete clearance of all lesions	None
36	Follow-up	0	No recurrence; normal skin texture	None

tion of injected and distant lesions following the four-session course and avoidance of pain, scarring, and recurrence during nine months of follow-up. Although the favourable outcome in this patient suggests therapeutic potential for intralesional Candida antigen, data are limited to one case. Larger, controlled trials will be needed to establish standard dosing regimens, the ideal interval between treatments, and patient or disease response predictors. Until then, intralesional Candida antigen should be considered a worthwhile alternative or adjunct in carefully selected adult patients with stubborn molluscum contagiosum, especially when other methods have already failed.

ETHICAL CONSIDERATIONS

We obtained written informed consent from the patient for the publication of this case report. Institutional Review Board (IRB) approval was deemed unnecessary, in accordance with institutional policies on case reports and non-experimental research.

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