Case Report
Olgu Sunumu

DOI: 10.4274/turkderm.galenos.2023.21447
Turkderm-Turk Arch Dermatol Venereol 2023;57:163-6

Molluscum contagiosum eruption in an adult patient using fingolimod and review of the literature

Fingolimod kullanan erişkin bir hastada ortaya çıkan molluskum kontagiosum erüpsiyonu ve literatürün incelenmesi

Sibel Yıldız, Selami Aykut Temiz, Recep Dursun, Ali Ulvi Uca*, Fahriye Kılınç**

Necmettin Erbakan University, Meram Faculty of Medicine, Department of Dermatology; *Department of Neurology; **Department of Pathology, Konya, Türkiye

Abstract

Molluscum contagiosum is a self-limiting viral eruption characterized by umbilical papules on the skin. Extensive, chronic, and larger lesions may occur in case of immunodeficiency. Fingolimod therapy used for the treatment of multiple sclerosis (MS) can also lead to immunosuppression and promote the development of molluscum contagiosum and other opportunistic infections. In this article, we discuss a case of extensive long-term molluscum contagiosum infection in the face of an adult patient treated for MS with fingolimod (after the discontinuation of which Molluscum contagiosum regressed), as well as similar cases from the literature.
Keywords: Molluscum contagiosum, fingolimod, immunosuppression

Öz

Molluskum kontagiosum, deride papüllerle seyreden, kendini sınırlayan bir viral erüpsiyondur. İmmün yetmezlik durumlarında yaygın, kronik seyirli ve büyük lezyonlar şeklinde seyredebilmektedir. Multiple skleroz (MS) tedavisinde kullanılan fingolimod da immünosüpresyona yol açarak molluskum kontagiosum ve diğer fırsatçı enfeksiyonlara zemin hazırlayabilmektedir. Bu yazımızda MS nedeniyle fingolimod kullanan erişkin olguda yüzünde yaygın, uzun süredir olan, ilacın kesilmesiyle gerileyen molluskum kontagiosum enfeksiyonu olan olgumuzu ve literatürdeki sunulmuş benzer hastaları irdeleyeceğiz.
Anahtar Kelimeler: Molluskum kontagiosum, fingolimod, immünosüpresyon

Introduction

Molluscum contagiosum is a common epidermal infection caused by DNA poxviruses resulting in papulonodular lesions. Involvement of the mucous membranes may rarely be observed[1]. These are white, pink, or skin-colored, round or oval, pearly, asymptomatic papules with a central umbilication. It is transmitted from person to person by direct contact or contaminated objects and spreads by autoinoculation. A pseudo-Koebner phenomenon may occur, and lesions may be linear or clustered in one area. It is most commonly seen in children. It is often sexually transmitted in adults. In patients without immune dysfunction, it usually heals spontaneously over a period of months to years[2]. Persistent, recurrent, difficult-to-treat, and clinically atypical molluscum contagiosum infections often occur in immunocompromised patients[3]. Some conditions commonly associated with molluscum contagiosum in adults include acquired immunodeficiency syndrome, solid

Address for Correspondence/Yazışma Adresi: Sibel Yıldız MD, Necmettin Erbakan University, Meram Faculty of Medicine, Department of Dermatology, Konya, Türkiye
Phone: +90 536 707 73 47 **E-mail:** sibelyavuz592@gmail.com **Received/Geliş Tarihi:** 13.03.2023 **Accepted/Kabul Tarihi:** 15.09.2023
ORCID: orcid.org/0000-0002-6426-3366

Cite this article as: Yıldız S, Temiz SA, Dursun R, Uca AU, Kılınç F. Molluscum contagiosum eruption in an adult patient using fingolimod and review of the literature. Turkderm-Turk Arch Dermatol Venereol 2023;57:163-6

Turkderm - Turk Arch Dermatol Venereol
2023;57:163-6

organ transplantation, systemic lupus erythematosus, sarcoidosis, neoplasms, immunosuppressive and biologic therapies[3]. Diffuse and giant molluscum contagiosum lesions may also occur in DOCK8 deficiency, a genetic disorder that affects dendritic and T-cell migration[4]. We intend to draw attention to the diffuse and resistant molluscum contagiosum infection for our patient who was taking fingolimod, an immunomodulatory agent used to treat multiple sclerosis (MS), and the regression of this infection when treatment was changed.

Case Report

A 41-year-old woman presented to our outpatient clinic with a rash on her face that had persisted for 8 months and was gradually increasing. On her dermatologic examination, there were bilateral pearl cord-like papules on the margin of the palpebrae and conjunctiva (Figure 1a,b). No lesions were noted in other skin and mucosal areas of the body. Our patient suffered from relapsing-remitting MS and had been taking fingolimod regularly for about 4 years. At the time of our examination, she was under control for MS. The blood count showed a normal leukocyte count and lymphocytopenia (400 cells/µL). Histopathologic examination of the lesion revealed endophytic hyperplasia in the epidermis and large intracytoplasmic inclusions in the keratinocytes and was compatible with molluscum contagiosum (Figure 2). Despite cryotherapy and curette treatment against molluscum contagiosum, the lesions persisted for 6 months. Fingolimod treatment was discontinued and ocrelizumab infusion therapy was started in the patient, who was also examined by the neurology department. Some of the lesions were curetted, and 5% potassium hydroxide was applied to some of them. After 2 months of treatment, all molluscum contagiosum lesions regressed (Figure 3a,b). Verbal and written informed consent was obtained from the patient for publication of this study.

Figure 1. (a,b) Bilateral pearl cord-like papules on the margin of the palpebrae and conjunctiva

Discussion

Molluscum contagiosum is a contagious viral rash characterized by shiny, dome-shaped papules with an average size of 3-4 mm, and the causative agent belongs to the poxvirus group. It can occur anywhere on the body surface but is most commonly observed in skin folds and the genital area[5]. The incubation period is 2 weeks or longer[5,6]. It is usually self-limiting and heals spontaneously within a few months or years[5]. Early treatment is important to prevent transmission and autoinoculation. Molluscum contagiosum occurs in healthy individuals, and the incidence of this viral infection increases in cases of immunodeficiency. Its association with impaired cellular immunity is even more pronounced.

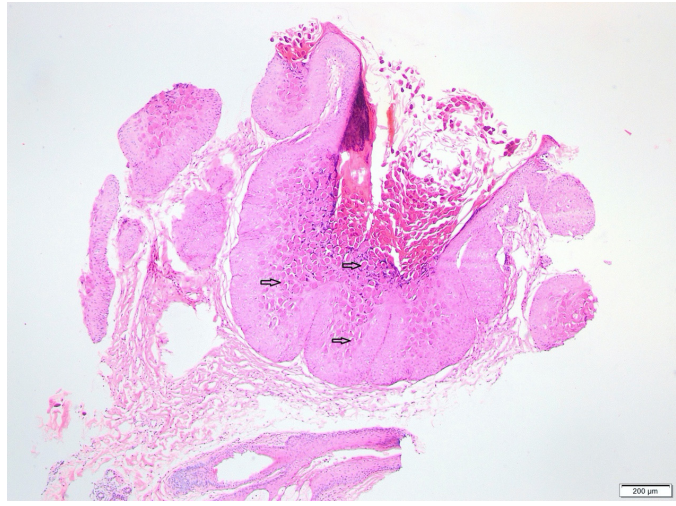

Figure 2. Endophytic hyperplasia in the epidermis and large intracytoplasmic inclusions in the keratinocytes

Figure 3. (a,b) After 2 months of treatment

Table 1. Cases of molluscum development due to fingolimod use in the literature and our case

Author, year	Age	Gender	Clinical findings	Treatment	Time to resolution	Outcome	Recurrence	Recurrence time
Cheraghmakani et al.[11], (2022)	26 24	F F	Thigh and leg Medial thigh	Cryotherapy, fingolimod discontinued. Cryotherapy, fingolimod discontinued.	5 months 6 months	100% 100%	None None	- -
Behle et al.[7], (2016)	18	M	Anogenital region, thighs, lower abdomen	Curettage and disinfectant containing chlorhexidine gluconate Fingolimod continues	6 months	All lesions were cleaned with curette and disinfectant was applied.	10 papules recurred	4 weeks later
Wetzel et al.[12], (2020)	41	F	Head, body and groin	Liquid nitrogen, curettage and topical 5% imiquimod, Fingolimod was discontinued.	3 months	Most of the lesions had disappeared at last follow-up?	None	-
Bennani et al.[13], (2020)	29	M	Neck, body, back, extremities, genital area	Mechanical removal, potassium hydroxide	3 months	100%	None	-
Monnier et al.[14], (2017)	39	F	Genital area	Laser, fingolimod was discontinued.	unknown	Out of 300 lesions, 20 remain.	None	-
Schneider et al.[10], (2022)	8 cases 19 to 50 years of age Av:34	7 F 1 M		Cryotherapy, imiquimod, cimetidine, other previous treatment methods unknown 5 patients discontinued fingolimod, 3 patients continue.	2-12 months	3 patients resolved while continuing fingolimod at an average of 15-16 months. 1 patient has no follow-up. In 3 patients fingolimod was discontinued, two of them healed. 1 patient continues fingolimod, molluscum contagiosum persists.	unknown	
Our case	41	F	Bilateral palpebrae	Cryotherapy, curettage, 5% potassium hydroxide Fingolimod was discontinued.	8 months	100%	None	-

Turkderm - Turk Arch Dermatol Venereol
2023;57:163-6

There are few cases of molluscum contagiosum reported during the treatment of patients with MS. Fingolimod, used to treat relapsing-remitting MS, is a sphingosine-1-phosphate receptor agonist and has immunomodulatory activity. It causes reversible sequestration of CD4+ and CD8+ T-cells and B lymphocytes by blocking the escape of lymphocytes from lymph nodes[7]. Lymphocytopenia is a side effect and does not affect lymphocyte activation and proliferation. This state of immunosuppression has increased the propensity for viral infections. In particular, herpes viruses such as varicella-zoster virus and human papillomavirus are the most common infections[8,9]. Molluscum cases associated with fingolimod use have also been reported in the literature[7,10,11,12,13,14]. We have summarized the cases of molluscum after fingolimod usage reported in the literature and our case in Table 1. Recently, Kaposi's sarcoma, a tumor associated with HHV-8, was reported in a patient taking fingolimod[15]. It has also been associated with other opportunistic infections such as progressive multifocal leukoencephalopathy and cryptococcal meningitis[10]. These viral activation situations should be considered in patients treated with fingolimod by neurologists, and the drug should be discontinued as needed. In our patient, the molluscum contagiosum lesions regressed after discontinuation of the drug.

In immunocompromised patients, cryptococcosis, penicilliosis, histoplasmosis, and coccidiomycosis causing the occurrence of molluscum contagiosum-like umbilical papules may be included in the differential diagnosis[16]. In this respect, histopathology is useful for definitive diagnosis. In patients with symptoms of opportunistic infections such as widespread, persistent molluscum contagiosum, all immunosuppression conditions, including iatrogenic causes, should be investigated and treatment should be started as soon as possible. It should be kept in mind that fingolimod used in the treatment of MS may also cause these side effects and that drug change may be necessary due to resistant viral infections in treatment management.

Ethics

Informed Consent: Verbal and written informed consent was obtained from the patient for publication of this study.

Peer-review: Externally peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: S.Y., R.D., F.K., Concept: S.Y., R.D., A.U.U., F.K., Design: S.Y., A.U.U., Data Collection or Processing: S.Y., S.A.T., R.D., A.U.U., Literature Search: S.Y., S.A.T., Writing: S.Y.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study received no financial support.

References

1. Gottlieb SL, Myskowski PL: Molluscum contagiosum. Int J Dermatol 1994;33:453-61.
2. Edwards S, Boffa MJ, Janier M, et al.: 2020 Europeanguideline on the management of genital molluscum contagiosum. J Eur Acad Dermatol Venereol 2021;35:17-26.
3. Taviti F, Calcinai A, Scarfì F: Molluscum contagiosum eruption during therapy with methotrexate and abatacept: A clinical and dermoscopic case study. Dermatol Rep 2022.
4. Chen X, Anstey AV, Bugert JJ: Molluscum contagiosum virus infection. Lancet Infect Dis 2013;13:877-88.
5. Sarıcaoğlu H: Viral Orijinli Hastalıklar. Turkderm 2011;45.
6. Trčko K, Poljak M, Križmarič M, Miljkovič J: Clinical and demographic characteristics of patients with molluscum contagiosum treated at the university dermatology clinic Maribor in a 5-year period. Acta Dermatovenerologica Croatica 2016;24:130-6.
7. Behle V, Wobser M, Goebeler M, Stoevesandt J: Extensive molluscum contagiosum virus infection in a young adult receiving fingolimod. Mult Scler 2016;22:969-71.
8. Aramideh Khouy R, Karampoor S, Keyvani H, et al.: The frequency of varicella-zoster virus infection in patients with multiple sclerosis receiving fingolimod. J Neuroimmunol 2019;328:94-7.
9. Triplett J, Kermode AG, Corbett A, Reddel SW: Warts and all: Fingolimod and unusual HPV-associated lesions. Mult Scler. 2019;25:1547-50.
10. Schneider S, Do D, Fuller R, Berger JR: Molluscum contagiosum in the setting of Fingolimod: The experience at one institution. Mult Scler Relat Disord 2022;58:103419.
11. Cheraghmakani H, Baghbanian SM, Ghasemi M: Atypical molluscum contagiosum on multiple sclerosis patients treated with fingolimod: A case report. Clin Case Rep 2022;10:e6382.
12. Wetzel M, Tidwell WJ, Callen JP: Disseminated molluscum contagiosum associated with immunomodulatory therapy. JAAD Case Rep 2012;6:708-9.
13. Bennani M, Benkirane S, Ziani J, et al.: Disseminated molluscum contagiosum in a patient on fingolimod for multiple sclerosis. Biomed J Sci Tech Res 2020;27:20720-2.
14. Monnier J, Collet-Villette AM, Olmi X, et al.: Prise en charge par laser de molluscum contagiosum génitaux profus apparus sous fingolimod. Annales de Dermatologie et de Vénéréologie 2017;144(Suppl):S340.
15. Tully T, Barkley A, Silber E: Kaposi sarcoma in a patient with relapsing-remitting multiple sclerosis receiving fingolimod. Neurology 2015; 84:1999-2001.
16. Grillo E, Urech M, Vano-Galvan S, Jaén P: Lesions on tattooed skin–a case study. Aust Fam Physician 2012;41:308-9.