Elsevier has created a Monkeypox Information Center in response to the declared public health emergency of international concern, with free information in English on the monkeypox virus. The Monkeypox Information Center is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its monkeypox related research that is available on the Monkeypox Information Center - including this research content - immediately available in publicly funded repositories, with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the Monkeypox Information Center remains active.

Travel Medicine and Infectious Disease 49 (2022) 102424

Contents lists available at ScienceDirect

Travel Medicine and Infectious Disease

journal homepage: www.elsevier.com/locate/tmaid

Unilesional monkeypox: A report of two cases from Italy

ARTICLE INFO

Keywords
Monkeypox
Unilesional monkeypox
Vesico-pustular lesions
Sexually transmitted infection

Dear Editor,

Monkeypox (MPX) is a zoonotic disease caused by a double-stranded DNA virus belonging to the genus *Orthopoxvirus* in the family *Poxviridae* [1]. Typical manifestations include fever, lymphadenopathy and a vesico-pustular rash consisting of lesions that progress through different clinical stages [2]. Historically, human-to-human and animal-to-human transmission has been limited to Africa, mainly via close contact and respiratory droplets.

The recent MPX outbreak has challenged this view, crediting sexual transmission as a new route of spread and shaping up as a public health concern across the globe, particularly in Men that have Sex with Men (MSM) [1,2].

Herein, we report two cases of human MPX characterized by a single cutaneous lesion, with no sign of systemic involvement. Demographics, clinical and laboratory features are summarized in Table 1. Patient 1 was a 35-year-old Italian MSM living with HIV currently under combination antiretroviral therapy with undetectable viral load, while patient 2 was a 29-year-old HIV-negative Italian MSM. Both of them presented at the Sexually Transmitted Infection (STI) Centre of Milan, complaining of a single genital lesion appeared respectively four and two days before; no concurrent systemic symptoms were appreciated. Both had a history of syphilis and patient 2 also reported having been treated for gonorrhea in the past. Physical examination revealed a single, umbilicated vesico-pustular lesion on the foreskin in patient 1 and on the penis shaft in patient 2 (Fig. 1a and b). In both cases dermoscopy showed whitish structureless areas with a brownish central depression and peripheral erythema (Fig. 1c and d). No other mucosal or cutaneous lesions were observed, and no lymphadenopathy was appreciated on palpation. Patient 1 reported travelling abroad (Greece and Spain) in the preceding weeks, where he had numerous condomless sexual intercourses; patient 2 denied travels, but reported an unprotected intercourse with an unknown partner a few days prior to the onset of the eruption. Moreover, neither had been vaccinated for smallpox. Vesico-pustular swabs tested negative for *Herpes simplex virus* (HSV), *Chlamydia trachomatis* (CT) and *Treponema pallidum* (TP), but positive for MPX on real-time polymerase chain reaction (PCR) in both patients. Interestingly, pharyngeal swabs tested negative for MPX DNA in both cases. Considering the lack of systemic involvement, both patients were sent home for self-isolation for 3 weeks. No new lesions appeared during this period.

According to a large multicenter study [3], unilesional presentation accounts for about 10% of all MPX cases. Speculatively, either lower viral loads and/or better control of the infection by the host's local immunity may play a role. Indeed, both our cases lacked systemic involvement (e.g., fever, lymphadenopathy, general malaise) and had negative pharyngeal swabs, consistent with a very localized infectious process. Nonetheless, factors contributing to this peculiar clinical picture are still incompletely understood.

A high index of suspicion is required to distinguish this unilesional MPX from other STIs, such as primary syphilis, lymphogranuloma venereum, and notably molluscum contagiosum. As previously reported, dermoscopy can assist the diagnosis, showing a specific pattern [4]. However, possible cases must always be confirmed by means of a Nucleic Acid Amplification Test demonstrating the presence of MPX DNA in the lesions.

In conclusion, unilesional MPX faces us with new challenges, both in terms of diagnostic difficulty and prevention strategies, as its benign course raises the chances of the disease going unnoticed, thus furthering the epidemic.

Funding/support

None.

Authors' contributions

Eleonora Quattri, Gianluca Avallone and Carlo A. Maronese: Conceptualization, Methodology, Writing-Original Draft, Investigation, Resources. **Marco Cusini and Carlo G. Carrera**: Data curation, Project administration. **Angelo V. Marzano and Stefano Ramoni**: Writing-Review and Editing, Supervision.

Declaration of competing interest

All authors declare no conflicts of interest.

https://doi.org/10.1016/j.tmaid.2022.102424
Received 4 August 2022; Accepted 6 August 2022
Available online 10 August 2022

Table 1
Epidemiological, clinical and laboratory data of two cases of unilesional MPX.

Patient	Age	Sex/Sexual behaviour	HIV status	Travels abroad	Unprotected sexual intercourses in the previous month	Vaccination for smallpox	Previuos STIs	Number of lesions	Localization	Systemic symptoms	MPX DNA Skin lesions	MPX DNA pharynx
1	35	MSM	+	Greece Spain	Yes	No	Syphilis	1	Foreskin	No	+	–
2	29	MSM	–	No	Yes	No	Syphilis, Gonorrhea	1	Penis trunk	No	+	–

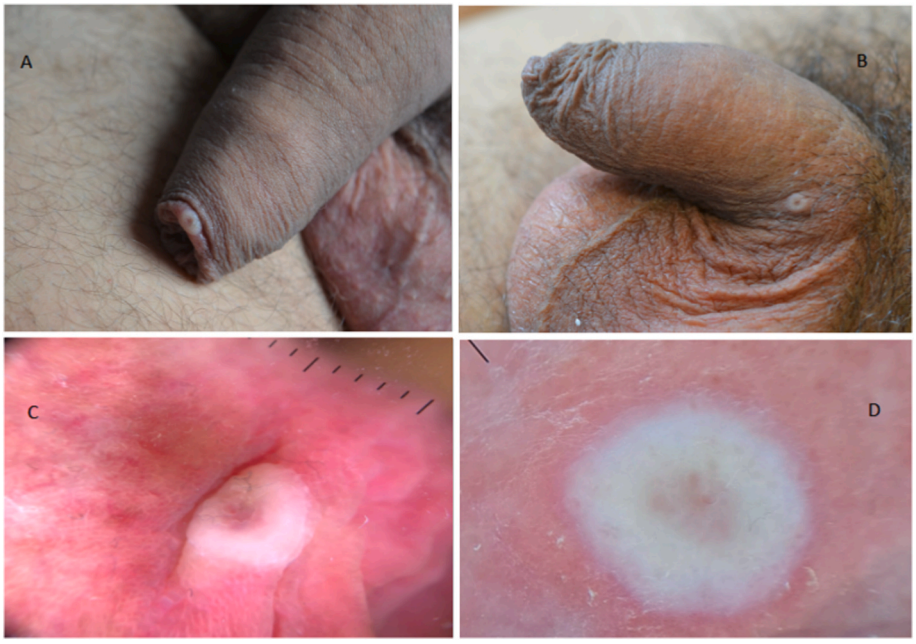

Fig. 1. Single vesico-pustular lesion with marked umbilication on the foreskin of patient 1 (a) and on the penis shaft of patient 2 (b). Dermoscopy showed whitish structureless areas with a brownish central depression and peripheral erythema in both cases (c,d).

References

[1] Alpalhão M, Frade JV, Sousa D, et al. Monkeypox: a new (sexually transmissible) epidemic? J Eur Acad Dermatol Venereol 2022 Jul 16. https://doi.org/10.1111/jdv.18424. Epub ahead of print. PMID: 35841292.
[2] Bosworth A, Wakerley D, Houlihan CF, Atabani SF. Monkeypox: an old foe, with new challenges. Infect Prev Pract 2022 Jun 30;4(3):100229. https://doi.org/10.1016/j.infpip.2022.100229. PMID: 35847384; PMCID: PMC9283547.
[3] Thornhill JP, Barkati S, Walmsley S, et al. Monkeypox virus infection in humans across 16 countries - april-june 2022. N Engl J Med 2022. https://doi.org/10.1056/NEJMoa2207323. 10.1056/NEJMoa2207323.
[4] Maronese CA, Beretta A, Avallone G, et al. Clinical, dermoscopic and histopathological findings in localized human monkeypox: a case from northern Italy. Br J Dermatol 2022. https://doi.org/10.1111/bjd.21773. 10.1111/bjd.21773.

Eleonora Quattri*
Dermatology Unit, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milan, Italy
Department of Pathophysiology and Transplantation, Università degli Studi di Milano, Milan, Italy

Gianluca Avallone
Department of Medical Sciences, University of Turin, Dermatology Clinic, Turin, Italy

Carlo A. Maronese
Dermatology Unit, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milan, Italy
Department of Pathophysiology and Transplantation, Università degli Studi di Milano, Milan, Italy

Marco Cusini
Dermatology Unit, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milan, Italy

Carlo G. Carrera, Angelo V. Marzano
Dermatology Unit, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milan, Italy
Department of Pathophysiology and Transplantation, Università degli Studi di Milano, Milan, Italy

Stefano Ramoni
Dermatology Unit, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milan, Italy

* Corresponding author. Via Pace, 9, 20122, Milan, Italy.
E-mail address: eleonora.quattri@unimi.it (E. Quattri).