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## Human monkeypox Italian locoregional small cluster

### ARTICLE INFO

#### Keywords

Infection  
Human monkey pox  
Sexually transmitted infection

#### Dear editor

In the era of the new Covid-19 pandemic, we have recently had to face with an outbreak of cases of human monkeypox virus (H-MPXV), until today a semi-unknown entity outside the west and central Africa regions, where, on the contrary, it is endemic [1]. Next to new singular isolated cases continuously being identified in each country, interestingly we report a small cluster of H-MPXV developed in July 2022 in a restricted area of the north west coast of Tuscany, in Italy. All denied any recent travel in specific endemic country or in other European place where the virus has been recently first isolated, such as in Spain or Canary Islands [2,3]. Any further links between cases were not clear but impossible to exclude since the “local” infection. The first case we observed was 45 years old male (MSM) who came to our dermatological unit for the appearance of cutaneous lesions on the genital area associated with mild flu-like symptoms. On examination we observed several erythematous papular lesions of different size with a depressed central crust mostly in the genital area; few isolated lesions were also observed on the legs, forehead and chin (Fig. 1a-c). Cutaneous and pharyngeal swabs were positive for Monkeypox DNA. The patient reported that the symptoms started 10 days after a sexual intercourse with a partner (a 40 years old MSM) that few days after their encounter developed a diffuse papulo vesicular dermatitis associated with mild fever and local adenopathy. We asked the patient come to our department for evaluation but he renounced. Thereafter within one month three other patients (in order respectively a 35, a 24 and 46 years old MSM), with unclear relationships, were notified to the local NHS public health office whose characteristic are summarized in the table (Table 1). Only a symptomatic therapy was suggested for all patients. All patients were recalled after two weeks and all confirmed spontaneous healing of the cutaneous lesions without scars. A further patient, a 73 years old man, was also referred to our service for a suspected monkey pox infection. On examination we observed over the penis crusted papulo vesicular lesions resembling those of monkeypox infection but of similar size and grouped into small plaques. Few vesicular lesion in a different stage of evolution were also visible on the scrotum and thigh. The patient denied any sexual encounter or general symptoms. A cutaneous swab confirmed the clinical diagnosis of genital herpes zoster (Fig. 1D). On the end of July 2022, the World Health Organization defined the H-MPXV a public health emergency of international concern (PHEIC) [4]. The H-MPXV belong to

the genus *Orthopoxvirus* in the family of *Poxviridae*, first isolated in 1970 and became endemic in Africa regions. Cases outside Africa have been sporadically reported and typically associated with international travel or imported animals [5]. From May 2022 cases of European isolation of the virus are increasing day after day. A recent report on the New England Journal of Medicine by Thornhill JP et al. [6], who included 528 cases of confirmed H-MPXV from 5 continents, 16 countries and 43 clinical sites, reported that all patients were men with homosexual orientation, prevalent of a white ethnic group (75%) with a median age of 38 years and half of them lived with a concomitant HIV infection under retroviral therapy. Ninety% of them reported a recent history of travel in another European country, different from patients of our cluster who denied any touristic moving. For 95% of them the suspected route of transmission was the sexual one, while the air droplet transmission was rare. 95% had rash or skin lesions, most of them less than 5 lesions and 70% only on the anogenital area. Isolated lesions on the arms as well as diffuse cutaneous rash are possible, even if rarer. The cutaneous manifestations are quite characteristic with few isolated, well defined, non-coalescing papules of different size evolving into crusted lesions all in the same stage of evolution. The main differential diagnosis is with herpes or varicella zoster virus, but in those cases, lesions are more numerous, usually grouped in a grape-like fashion and with a typical polymorphic stage of evolution. Systemic but aspecific symptoms were reported in half of patients. Only 5% of patients received monkey-pox-specific treatment, to mean this is a self-healing condition. Clinically we have “confirmed case of infection”, in particular patients with a positive MPXV -PCR from swab on skin or anogenital lesion. On the contrary we have “probable case of infection”, patients with history of direct contact with “confirmed cases” or with an increase of Orthopoxvirus-specific immunoglobuline M or G, but without a specific positivity for H-MPXV at PCR [7]. Our suspected index case remained unconfirmed, as a probable case, emphasizing need for good quality swab technique and early testing. We present our small cluster of patients in order to stress locally sanitary authorities to take care of this new emerging problem, especially to make known to those that engage in high-risk sexual practice who are often still unaware of this infection.

<https://doi.org/10.1016/j.tmaid.2022.102471>

Received 17 September 2022; Received in revised form 22 September 2022; Accepted 3 October 2022

Available online 8 October 2022

1477-8939/© 2022 Published by Elsevier Ltd.



**Fig. 1.** Typical vesico-pustular lesions with a crusted depressive central area on the scrotum and penis, and similar lesions on the chin (A–C), Herpes zoster with vesicular lesion in the typical different stage of evolution on the penis, scrotum (D).

**Table 1**  
Summarization of the data about the 5 patients affected by H-MPXV.

Patient	Sex	Age	Systemic symptoms	Swelled lymphnodes	Skin site involved	Associated HIV infection	Recent foreign trips	Diagnosis confirmed by PCR	Positive throat swab
1	M-MSM	45	Fever	Y	Genital, leg and face (no oral mucosa)	NA	N	N	NA
2	M MSM Partner of patient 1	40	Headache, muscle aches	Y	Genital only	N	N	Y	Y
3	M MSM	35	Fever	Y	Genital only	N	N	Y	NA
4	M MSM	24	Muscle aches, flu-like symptoms	Y	Genital only	Y	N	Y	NA
5	M MSM	46	Fever	Y	Genital and perianal	Y	N	Y	Y

Y=YES, N=NOT, NA=NOT APPLICABLE.  
MSM: man who have sex with man.

**Funding source**

None.

**Declaration of competing interest**

All the authors have no financial obligations or conflict of interest to declare.

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