Severe monkeypox case associated with recent laboratory diagnosis of HIV: case report

Caso grave de monkeypox associado ao diagnóstico laboratorial recente de HIV: relato de caso

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ABSTRACT

Introduction: Monkeypox is a zoonosis caused by the monkeypox virus. The first confirmed human case was in 1970, when the virus was isolated from a child in the Democratic Republic of the Congo. Since the beginning of May 2022, a large and unexpected outbreak has been documented globally, with the first cases initially described in the UK reaching around 70 countries today. The causes of this explosive increase in patients are not well understood, but exceed more than ten thousand10,000 infected by the third week of July 2022. Clinical and epidemiological presentations have been distinct from endemic cases and from small outbreaks previously described in non- endemic areas. **Objective:** The aim of this study was to describe the evolutionary and epidemiological, clinical characteristics of Monkeypox and human immunodeficiency virus co-infection in a patient treated at an STI/AIDS Reference Service in São Paulo, Brazil. **Methods:** information contained in this study was obtained through a review of the medical records, interviews with the patient, photographic record of the diagnostic methods, to which the patient was submitted and review of the literature. **Results:** A Brazilian man, with no epidemiological history of travel who was diagnosed with Monkeypox virus through polymerase chain reaction. At the same time of this diagnosis, he received a laboratory diagnosis of human immunodeficiency virus, Chlamydia Urethritis, and Late Latent Syphilis. **Conclusion:** To reduce the risk of the dissemination of Monkeypox, strategies at the public health level are necessary, with the dissemination of information and the development of prevention projects with targeted information and recommendations for vulnerable populations, especially men who have sex with men, with great prudence, seeking not to favor the development of stigmas as already experienced at the beginning of the human immunodeficiency virus epidemic.

Keywords: HIV; Syphilis, Monkeypox, ITS.

RESUMO

Introdução: Monkeypox é uma zoonose causada pelo vírus monkeypox. O primeiro caso humano confirmado foi em 1970, quando o vírus foi isolado de uma criança na República Democrática do Congo. Desde o início de maio de 2022, um surto grande e inesperado tem sido documentado globalmente, com os primeiros casos inicialmente descritos no Reino Unido atingindo hoje cerca de 70 países. As causas desse aumento explosivo de pacientes não estão bem esclarecidas, mas ultrapassaram 10 mil infectados até a terceira semana de julho de 2022. As apresentações clínicas e epidemiológicas têm sido distintas dos casos endêmicos e dos pequenos surtos previamente descritos em áreas não endemicas. **Objetivo:** Neste relato descrevemos as características clínicas evolutivas e epidemiológicas da coinfecção do Monkeypox e do imunodeficiência humana em um paciente atendido em um serviço de referência em infecções sexualmente transmissíveis — IST/Aids de São Paulo, Brasil. **Métodos:** as informações dos métodos contidas neste estudo foram obtidas por meio de revisão dos prontuários, entrevistas com o paciente, prontuário fotográfico dos métodos diagnósticos, aos quais o paciente foi submetido e revisão da literatura. **Resultados:** Homem brasileiro, sem antecedente epidemiológico de viagem, foi diagnosticado com Monkeypox por meio de reação em cadeia da polimerase. Simultaneamente a esse diagnóstico, recebeu diagnóstico laboratorial de vírus da imunodeficiência humana, uretrite por clamídia e sífilis latente tardia. **Conclusão:** Para reduzir o risco de disseminação do Monkeypox, são necessárias estratégias no âmbito da saúde pública, com disseminação da informação e elaboração de projetos de prevenção com informações direcionadas e recomendações para populações vulneráveis, especialmente homens que fazem sexo com homens, com bastante prudência, buscando não favorecer o desenvolvimento de estigmas como os já vivenciados no início da epidemia de imunodeficiência humana.

Palavras-chave: HIV, Sífilis, monkeypox, IST.

INTRODUCTION

Monkeypox (MPX) is a zoonosis caused by the monkeypox virus (MPXV), which is a member of the *orthopoxvirus*[1] genus. The infection in humans had been described for more than five decades – initially reported in 1959 as an outbreak of a smallpox-like disease in monkeys in Copenhagen, Denmark[2]. The first confirmed human case was reported in 1970 when the virus was identified in a child in Democratic Republic of the Congo[3]. Vaccination against smallpox caused cross-immunity to MPXV; however, the eradication of smallpox and removal from vaccination schedules (during the 1980s) triggered the clinical relevance of MPX[4].

Since early May 2022, a large and unexpected outbreak has been documented globally, with the first cases initially described in the UK and soon after in other Western European countries, as well as North and South America, the Middle East, North Africa, and Australia[5], reaching more than 70 countries and over 10,000 diagnosed cases in 2 months.

The clinical and epidemiological presentations have been very different from endemic cases and small outbreaks previously described in non-endemic areas. In this current outbreak, published data so far show high prevalence of men who have sex with men (MSM), with HIV infection representing the main comorbidity. Like HIV, some initial studies demonstrated the elimination of MPXV in genital secretions, addressing the possibility of this disease being considered a sexually transmitted infection (STI)[6].

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OBJECTIVE

The aim of this study was to describe the evolutionary and epidemiological clinical characteristics of MPX and HIV co-infection in a patient treated at an STI/AIDS Reference Service in São Paulo, Brazil.

METHODS

Information contained in this study was obtained through a review of the medical records, interviews with the patient, photographic record of the diagnostic methods to which the patient was submitted, and review of the literature.

RESULTS

A 23-year-old cisgender, MSM, attended our clinic in São Paulo in the first week of July 2022. Initially, he noticed a single, painful papular lesion in the abdomen area. During the following day, he presented with fever and headache, and several lesions (papules and pustules) appeared on his face, ear, and scalp.

Additionally, he reported urethral discharge and sought emergency care, where he was clinically diagnosed with acne and syphilis and discharged with symptomatic medications.

Due to the worsening of his condition, he came to our STI service with new lesions and significant pain in the penis (**Figure 1A**). He presented with vesicular and pustular lesions in various stages of evolution on the face, trunk, upper limb, lower limbs, genital region, and palpable lymph nodes in multiple groups (inguinal, cervical bilaterally) (**Figures 1B, C, D, and E**). In the genital region, there was a significant edema of the foreskin and penile body with a pus-like urethral discharge (**Figure 1F**). He had no anal lesions or proctitis.

The hypotheses of MPX infection, urethral discharge syndrome, and possible HIV infection were assumed. A rapid test for HIV was

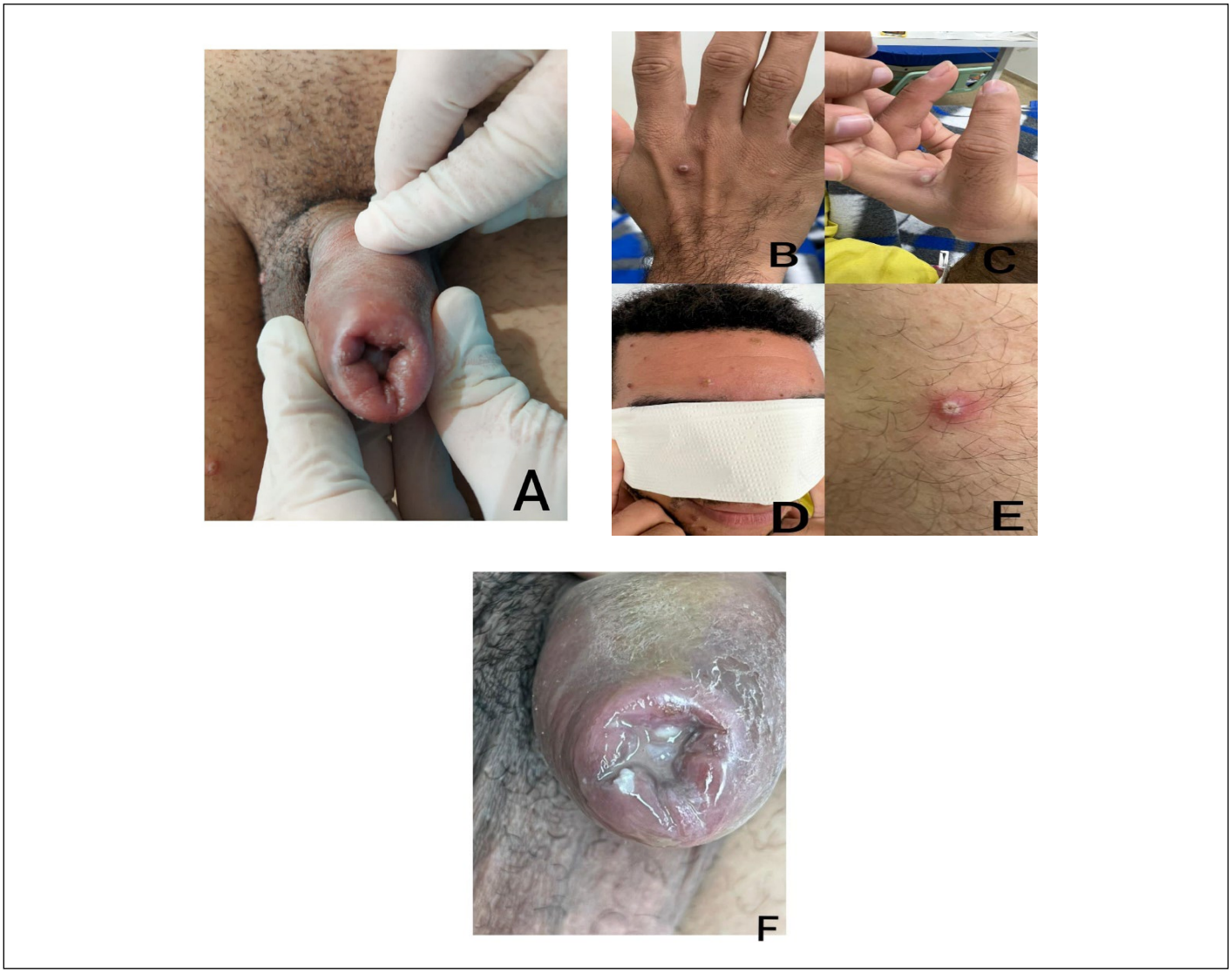

Figure 1 – New lesions and edema (**A**). He had vesicular, pustule lesions in various stages of evolution in the face, trunk, upper limb, lower limbs, genital region, and palpable adenomegalies in various chains (inguinal, cervical) (**B**, **C**, **D**, and **E**). In the genital region, he presented significant foreskin and penile body, with secretion output with purulent aspect by the urethra (**F**).

performed (rapid test reagent), and specimens were collected for molecular investigation of gonococcus and chlamydia, serology for hepatitis B and C, and polymerase chain reaction for MPX by swabbing the lesions. The patient started initial empirical treatment with ceftriaxone and azithromycin. Due to the high number of skin lesions (over 100), the mild penile edema, and uncontrolled pain, the patient was hospitalized.

He denied comorbidities and previous trips in the past 21 days. He reported sexual intercourse without condoms with the exclusive practice of insertive anal sex and fellatio with occasional cisgender men during a party held in a sauna 2 weeks before the onset of symptoms. He reported a history of urethritis treated in 2021. He never had an HIV test. Inflammatory markers (C-reactive protein) were high, and he was positive for syphilis (VDRL 1/32).

Following the first few days, new lesions appeared in the feet, inguinal region, and thorax, however, without systemic complications. The patient started ARV (tenofovir, lamivudine, and dolutegravir) and treatment for late latent syphilis with benzathine penicillin 7,200,000 U and analgesics.

Related to HIV parameters, CD4 T Lymphocyte was 334 cells/mm³ and viral load was 80,771 copies (Log:4.91)

The patient remained in care for approximately 2 weeks, with good clinical evolution, no fever, and improvement of pain and penile edema. There was a slight increase in transaminases from the laboratory markers, without any clinical consequences.

He was discharged with guidance to remain isolated and later return to outpatient follow-up.

Strengths

Patient was seen at an Infectious Diseases reference center with available resources for accurate diagnosis.

Limitations

After discharge from hospital, he has not yet visited the outpatient service to evaluate the evolution of MPX.

DISCUSSION

Since May 2022, we have been dealing with an outbreak of MPX in the population of MSM in non-endemic areas. In addition to a clinical condition characterized by a high prevalence of pleomorphic lesions and a high percentage of involvement of the anogenital region, most patients living with HIV who reside in MPX-endemic areas are either not aware of their HIV diagnosis or are not undergoing virological suppression treatment[7]. Immunocompromised individuals may be more susceptible to severe forms of MPX[8]; therefore, HIV may also contribute to the current increase in MPX[9].

Previous MPX reports outside African countries have not identified HIV as an essential cofactor in the epidemiology and clinical presentations of MPX[10]. Among the data collected from more than 500 suspected cases of MPX in the DRC (Congo) during the 1996–1998 outbreak, only 3 cases of HIV/HMPX co-infection were detected, and the clinical details of these patients were not described[11]. Mathematical models exploring the relationship between HIV and MPX co-infection suggest that HIV could promote the transmission of the MPX virus and vice versa[12]. In a 40-patient cohort published by Ogoina D, et al.[13], 9 patients were living with HIV, and these had larger skin lesions, more prolonged illness, more genital ulcers, and bacterial superinfection when compared to HIV-negative cases.

Our patient presented a severe cutaneous evolution (>100 lesions) that could be explained by the immunological status associated with HIV infection. However, this was the only severity criterion for hospitalization and had no complications. It is important to highlight that in the genital region, the lesions were concentrated in the penile area, and the patient reported exclusively insertive activity.

This is one of the first severe cases (over 100 lesions) described in the literature with a concurrent diagnosis of HIV infection and other STIs (syphilis and chlamydia).

CONCLUSION

Public health strategies are needed to reduce the risk of MPX dissemination, such as improving access to information and elaborating prevention and educational projects targeted to vulnerable populations, especially MSM, not favoring the development of stigma as already witnessed in the beginning of the HIV epidemic.

Early diagnosis and isolation are essential, especially in countries where the possible arrival of preventive vaccines for this disease is unlikely to occur quickly and in these populations that are considered to have a high prevalence. Another challenge is structuring care services with the availability of serological testing for differential or concurrent diagnosis of other STIs, MKPX, referrals for hospitalization, team training for biosafety care, notification of cases to health authorities, and surveillance of contacts.

It is crucial to consider the characteristics of vulnerability concerning orientation, type of sexual practice, and the number of partners, among other factors that may contribute to an outstanding prevalence of cases in the population living with HIV.

We still need more information comparing people living with HIV and negative HIV status, with particular attention to the possible differences according to the degree of immunosuppression in terms of clinical evolution and complications.

Approval of the Human Research Ethics Committee

Yes. Under the knowledge of the technical board of the institution.

Participation of each author

MEC: Conceptualization, Data curation, Formal Analysis, Writing – original draft, Writing – review & editing. ÁFC: Conceptualization, Data curation, Formal Analysis, Writing – original draft, Writing – review & editing. CAB: Conceptualization, Data curation, Formal Analysis, Writing – original draft, Writing – review & editing. LGC: Conceptualization, Data curation, Formal Analysis, Writing – original draft, Writing – review & editing. RJCS: Conceptualization, Data curation, Formal Analysis, Writing – original draft, Writing – review & editing. RSN: Conceptualization, Data curation, Formal Analysis, Writing – original draft, Writing – review & editing.

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Conflict of interest

The authors declare no conflicts of interest.

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ERRATUM

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Where it reads:
ABSTRACT
Introduction: Monkeypox is a zoonosis caused by the smallpox virus.
RESUMO
Introdução: Monkeypox é uma zoonose causada pelo vírus varíola.
INTRODUCTION
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It should read:
ABSTRACT
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