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## Case Report

# The first two case reports of confirmed Mpox in patients with syphilis in a dense urban setting, Can Tho, Vietnam: From clinical presentation, treatment, and epidemiological surveillance to prevention

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## ABSTRACT

This report elucidated the first two noteworthy cases of Mpox that manifested as an emerging concern in a densely populated city in Vietnam. Two male patients (22 and 27 years old) were admitted to the hospital due to the presence of small pustules on their faces, accompanied by symptoms of fatigue, drowsiness, and muscle pain. Reverse transcription-polymerase chain reaction confirmed the presence of Mpox. The patients possessed a medical history involving four previous treatments for syphilis, a continuous antiretroviral regimen for over 3 years, no previous history of chickenpox, a lack of vaccination against chickenpox, and engagement in intimate contact with other men. Following a 14-day isolation period coupled with appropriate medical interventions, both patients exhibited stable health conditions, marked by the absence of fever and the desiccation of skin blisters. Subsequently, they were discharged with instructions for ongoing health monitoring. Comprehensive surveillance and monitoring approaches have been implemented for all individuals in close contact with the affected patients, adhering to established guidelines. Notably, no suspected cases have been identified during the current surveillance efforts. The collective findings underscore the significance of robust surveillance, continuous monitoring, and strategic vaccination initiatives, particularly in densely populated urban centers, to effectively manage and mitigate the impact of Mpox outbreaks.

## Introduction

More than 80,000 cases of Mpox (formerly known as monkeypox) infection have been officially verified. The spread of Mpox mostly affects bisexuals, gays, and other men who engage in sexual activities with men, resulting in a high rate of transmission [1]. Although emerging evidence indicates the simultaneous presence of Mpox, HIV, and syphilis in a single individual (in the USA, Spain, and the Czech Republic), there is a dearth of evidence on concurrent infection with Mpox and syphilis in countries in Southeast Asia, especially Vietnam [2–4]. Here we present the first two cases of individuals with syphilis infection who contracted Mpox in Can Tho city, a dense urban area in southern Vietnam. This comment also discussed the endeavors undertaken in a community hospital to diagnose and treat these illnesses and preventive strategies.

## Case presentation

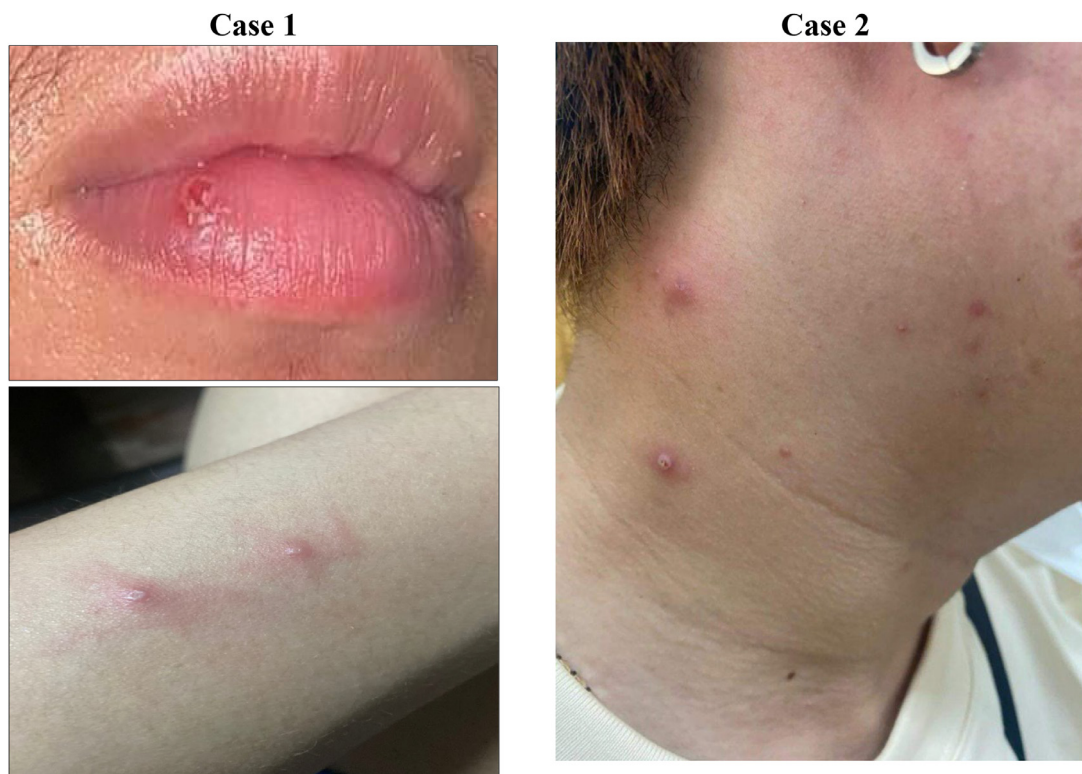
Two male patients (22 and 27 years old) were admitted to the hospital due to the presence of small pustules on their faces, accompanied by symptoms of fatigue, drowsiness, and muscle pain, prompting them to seek examination at Can Tho Dermatology Hospital. Upon admission, the patients demonstrated alertness, maintained good contact, and exhibited no abnormalities upon examination of other organ systems (nervous, cardiovascular, digestive, and musculoskeletal). Vital signs included a pulse rate of ~80 beats per minute, a body temperature of ~37°C, blood pressure measuring ~110/70 mmHg, and a respiratory rate of ~20 breaths per minute. A vesicular rash, resembling blisters, manifested on the skin surface, predominantly affecting the face, forearms (Figure 1), hands, chest, back, thighs, calves, and anus, with sizes ranging from 0.2 to 0.3 mm (sparse distribution). The healthcare provider suspected Mpox, leading to a diagnostic sample collection. Real-time polymerase chain reaction (PCR) tests were conducted at the Pasteur

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**Figure 1.** Small pustules on the lip, neck, and inside the forearm of the patients.

Institute in Ho Chi Minh City, which is authorized by the Vietnam Ministry of Health (Supplementary Data). The real-time PCR test confirmed the presence of Mpox, resulting in isolation and treatment of the patients at the medical center. The patients' medical history includes four doses of syphilis treatment at Can Tho Dermatology Hospital, a continuous antiretroviral (ARV) regimen exceeding 3 years, no previous history of chickenpox, and an absence of chickenpox vaccination. Both cases reported engaging in sexual activities with other men.

The patients were isolated and undergoing treatment at a medical facility, receiving cefotaxime 1 g intravenous injection twice daily, fexofenadine 60 mg orally once daily, paracetamol 650 mg orally twice daily, and desloratadine 5 mg orally once daily. Following a 14-day period of isolation and treatment in the hospital, the patients were stabilized; there was no fever, and the blisters dried out. Subsequently, these patients were discharged to continue monitoring their health at home. All close contacts with the patients are diligently supervised and monitored in accordance with regulations, and as of now, no suspected cases have been identified.

## Discussion

In the 21 days preceding symptom onset, the patients neither traveled to countries where Mpox is endemic nor had contact with confirmed or suspected cases. The healthcare system currently lacks clarity regarding the source of infection for these patients. Patients primarily undergo symptomatic treatment, including fever reduction and pain relief, care for skin damage, nutritional and electrolyte balance, early detection and monitoring of complications, and infection prevention and control. Thus, individuals exhibiting symptoms indicative of Mpox are strongly urged to proactively seek medical attention for advice, guidance, diagnosis, and appropriate treatment to mitigate further transmission within their community. In response to the identified cases, a proactive approach was adopted to conduct tests on all close contacts of the patients. This comprehensive testing strategy was aimed at detecting and evaluating possible asymptomatic cases and assessing the extent of

transmission within the community. As of the current surveillance efforts, no suspected cases have been identified among the contacts, emphasizing the importance of early detection and monitoring to prevent further transmission.

Mpox has been quickly expanding globally, particularly through sexual transmission [5]. Metropolitan areas like Can Tho have a significant prevalence of sexually transmitted infections (STIs) [6]. These patients frequently exhibit the co-occurrence of many STIs, including syphilis. While both syphilis and Mpox infections can present with skin lesions, there are notable differences in their characteristics. Syphilis lesions typically appear as painless sores or ulcers, known as chancres, at the site of infection, often on the genital area, anus, or mouth. These lesions are usually firm, round, and raised. On the other hand, Mpox lesions, as observed in the reported cases, manifest as small pustules or vesicular rashes on various areas of the skin, including the face, forearms, hands, chest, back, thighs, calves, and anus. These lesions resemble blisters and can vary in size. Additionally, while syphilis lesions are a primary manifestation of the infection, Mpox is known to cause a more generalized skin eruption, often involving multiple areas of the body. The appearance of the lesions and their distribution, coupled with the clinical symptoms, aid in distinguishing between these two distinct infections. However, an accurate diagnosis relies on laboratory tests, such as real-time PCR, to confirm the specific pathogen causing the infection.

Given the present circumstances, it is imperative to assess the possibility of a Mpox diagnosis in individuals with syphilis who exhibit a characteristic rash and engage in high-risk sexual activities. In addition to confirming the presence of Mpox through real-time PCR tests, comprehensive diagnostic assessments were undertaken, including tests for other STIs such as syphilis. The patients had a medical history of four doses of syphilis treatment, indicating the healthcare provider's diligence in investigating potential co-infections. The results of these additional tests, if conducted, contributed to a more thorough understanding of the patients' health status. Furthermore, avoidance of close contact, respiratory and hand hygiene, self-isolation, sexual intercourse, and international travel considerations are needed. Individuals suspected of

having Mpox are advised to proactively declare it to local health authorities and promptly contact a medical facility for monitoring and guidance. Furthermore, promotion of health measures is needed, such as ensuring food safety, adopting a healthy lifestyle, increasing physical activity, and improving overall health [7,8]. Although the current incidence of Mpox cases may be sporadic, it is crucial to underscore the significance of vaccination as a pivotal preventive strategy against Mpox infection. Thus, there is a pressing need for governmental investment in and commitment to the advancement of vaccine research tailored to the prevention of Mpox. The development and deployment of an effective Mpox vaccine would serve as a crucial public health intervention, mitigating the spread of the virus and fortifying the resilience of populations at risk [8]. Adherence to these preventive measures contributes significantly to the reduction of Mpox transmission, safeguarding individual and public health.

## Conclusion

Assessing the potential of a Mpox diagnosis is crucial for patients with syphilis who participate in high-risk sexual activities and display a distinctive rash. To effectively manage and limit the effects of Mpox epidemics, it is imperative to have rigorous surveillance, ongoing monitoring, and selective immunization campaigns, especially in densely populated metropolitan areas.

## Declaration of competing interest

The authors have no competing interests to declare.

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## Ethics statement

This study was approved by the Can Tho Department of Health, Vietnam.

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## Author contributions

HDN and CQH conceptualized the study; HDN and CQH contributed to data extraction and curation; HDN contributed to formal analysis; HDN wrote the first draft of the manuscript; HDN, TMH, CQH contributed to data interpretation and editing; HDN, WKK, and CQH revised the manuscript; HDN, WKK, and CQH contributed in review and editing of the manuscript; All authors read and approved the manuscript.

## Informed consent

The authors certify that they have obtained all appropriate patient consent forms, which were carried out by the Can Tho Centers for Disease Control and Prevention. In the form, the patients have given consent for their images and other clinical information to be reported in the journal.

## Supplementary materials

Supplementary material associated with this article can be found, in the online version, at [doi:10.1016/j.ijregi.2024.01.003](https://doi.org/10.1016/j.ijregi.2024.01.003).

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