Monkeypox infection in a developed country: A Case Report

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Case Report

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Abstract

Describing patient journeys of monkeypox in a developed country, as it is manifested in the current outbreak, as well as rapidly sharing information as a lesson from the early days of the SARS-CoV-2 pandemic.

Background

Monkeypox disease, caused by the zoonotic monkeypox virus of the Poxviridae family and the Orthopoxvirus genus, has evolved significantly in all epidemiological axes since its diagnosis in humans in 1970. First, its incidence accelerated in recent years. During the 1970's 47 cases were reported, whereas a decade later that number reached 356, without dramatic changes in the 1990's.(1) However, confirmed and suspected cases in the two decades between 2000 and 2019 increased to over 10,000 and 18,000 respectively, not considered to be related to improved reporting.(1) The recent outbreak starting in May 2022 already includes 5783 confirmed cases, as of July 01, 2022.(2)

The second significant altered axis is the geographic one. After being detected in the Democratic Republic of Congo (DRC), monkeypox reached five other African countries during the 1970's, where a decade later it spread to 4 more in the continent. However, only in 2003 infection was first confirmed outside Africa, in a United States outbreak of 47 cases, reported to have been exposed to infected animals, otherwise remaining rather contained, with few non-African sporadic cases, such as one in Israel in 2018, four in the United Kingdom and one in Singapore.(1) Conversely, the recent surge has spread to over 50 countries, with thousands of cases in Europe and hundreds in North America. Asia, as of writing these lines, has but few cases. In Israel, 52 cases have been diagnosed thus far.(3)

Other axes of transformation include change in age at presentation, from young children to young adults. Current outbreak is seen mainly in young men who identify as gay, bisexual and other men who have sex with men (GBMSM). Mode of transmission has changed as well, from animal-to-human transmission to a human-to-human one.(4)

Objective

Describing patient journeys of monkeypox in a developed country, as it is manifested in the current outbreak, as well as rapidly sharing information as a lesson from the early days of the SARS-CoV-2 pandemic.

Case Report

Both patients were Israeli men in their 30s who have sex with men (MSM). Neither had received the smallpox vaccine or anti-viral treatment administered for monkeypox.

Patient 1 had a normal Body Mass Index (BMI), suffered from hemorrhoids, and had a history of Condyloma Acuminatum a year prior to the current infection, followed by inoculation with the human papillomavirus (HPV) vaccine, the last dose of which was administered a month prior to infection. Additionally, he was once infected and twice vaccinated against SARS-CoV-2 roughly a year before diagnosis.

The first reported symptom was a painless sensation of skin textural change in the perianal region, where no visible lesions were detected by a primary care physician (Fig. 1). A day later a clinical picture of viral infection ensued with a low-grade fever of 37.5 degrees Celsius, mild muscle aches and fatigue.

A possible chain of transmission was identified, as Patient 1 reported having unprotected sexual intercourse with his partner up to a day prior to symptom onset, while the partner (who was confirmed for monkeypox several days prior to Patient 1) had previously engaged in unprotected intercourse with a traveler from Europe. No further transmissions were identified, and following diagnosis, Patient 1 practiced self-quarantine and had no other close contacts.

On day three, measured fever rose to 38.0 degrees Celsius with chills, alongside a severe new headache and bilateral tender inguinal lymphadenopathy. Additionally, the first lesions appeared, comprised of a raised, painless serous-secreting papules in the anal and perianal regions. Given the exposure history and clinical picture, the follow-up visit with the primary care physician resulted in a referral to the Emergency Room (ER), following current Israeli guidelines for case of suspected monkeypox.

In the ER the patient's vital signs, apart from fever, were normal and no additional areas of skin or mucosa were involved. Swabs from the anal lesions and nasopharynx were positive for monkeypox in a polymerase chain reaction (PCR) test. Complete Blood Count (CBC) and a biochemistry panel (including creatinine, electrolytes, and liver function tests) demonstrated slight neutrophilia of 6 10e3/μL (normal range 1.4-6 10e3/μL) in the presence of normal leukocytes. C-reactive protein (CRP) was elevated to 93.43 mg\L (normal range of 0.03-5 mg\L) as well as a Alanine Transaminase (ALT) reaching 64 U/L (normal range of 8–39 U/L). Patient 1 was discharged with a topical antibiotic prescription, and a recommendation to perform a complete Sexually Transmitted Disease panel testing, in the community setting.

On the fourth day of symptoms, the number of lesions increased to 10 while progressing to pruritic pustules. Additionally, a single papular lesion appeared in the oral commissure. Day 5 of symptoms was characterized by a more severe inguinal pain and lymphadenopathy, with some anal, perianal and buttocks lesions exhibiting central umbilication. Additionally, raised red patches spread over the neck, trunk and upper extremities. The patient was treated with pain control medications, antihistamines and topical creams.

A day later the patches evolved to painless umbilicated papules, still limited to trunk and upper extremities. On the 7th day the anal lesions had a vesicular appearance, caused pruritis and severe anal pain and dyschezia, which prompted the patient to seek emergent medical care. His second visit to the ER

had similar laboratory results. The patient was discharged with a combination of Oxycodone and Paracetamol. On day 8 the fever broke, lymphadenopathy and pain subsided and some of the anal and perianal lesions began to crust, though pruritis was still prominent.

Patient 1 also reported a high anxiety level, referring to the rapid changes in symptomatology and the unknown expected duration of the disease. Notably, the patient also mentioned that a high level of anxiety regarding monkeypox characterizes the gay community since the outbreak.

The second case refers to an HIV-positive male, treated with a combination of abacavir, dolutegravir and lamivudine, with a CD4 + T-cell count of over 500 cells/mm3 (normal range 436–1394). Patient 2 also used Apixaban, following a Venous thromboembolism (VTE) event. Similarly to Patient 1, Patient 2 had a normal BMI, and had a history of Condyloma Acuminatum and was administered the human papillomavirus (HPV) vaccine, with the last dose administered several weeks prior to infection.

Malaise, dysuria, penile pruritis and unilateral inguinal lymphadenopathy were the first symptoms to appear, with no definite source of transmission (Fig. 1). Symptoms began two weeks after a reported unprotected intercourse with a traveler from Europe. Over the next two days, a single lesion with central umbilication was identified on the glans penis. On day 4, in light of continuous symptoms and an increase in the number of lesions (from 1 to 10), the patient sought medical attention.

On day 5, the ER exam pointed to cervical lymphadenopathy and 10 asynchronous lesions comprised of pustules over the penis and spread papules in all bodily regions. Vital signs, CBC, biochemistry panel, (including creatinine, electrolytes and liver function tests) and urinalysis were normal. Two days later the penile lesions appeared vesicular, while the non-genital papules increased in number and distribution, though sparing the face. On day 10 lesions began to crust, while some disappeared by day 13. Anxiety levels relating to the diagnosis remain significant even as symptoms were improving.

Discussion

This is the first Israeli case report of monkeypox disease in the current outbreak, and among the first ones in developed countries. The two presented cases were atypical compared to clinical pictures prior to the current outbreak, as they included asynchronous lesions (at different phases of development) over the anal and genital areas, as well as over the trunk and extremities. This atypical classification matches sporadic case reports coming out of Italy(5) and Australia(6) in the recent weeks. At large, both patients were men in their 30s who have sex with men (MSM), with a presentation not requiring viral treatment or hospitalization.

Given the rapid increase in positive cases, threshold of suspicion should be lowered alongside increasing availability of testing, and education about human monkeypox disease. It is important to inform suspected or diagnosed patients about transmission modes and the need for self-quarantine. Researchers should investigate the infectious period, in order to determine required measures needed to

minimize transmission. At the same time, we should address the issue of emotional stress and anxiety that is emerging in the gay community.

Additionally, the medical community and healthcare policy makers should implement lessons learned from the SARS-CoV-2 pandemic, especially those relating to epidemiological investigations and contact tracing, sufficient supply of tests, and, most importantly, rapid and open access to information around the world. Lastly, both patients described that significant anxiety around the diagnosis dominated their journey, while sharing that a concern is rising in the GBMSM community; a concern that should be specifically addressed by healthcare providers.

Declarations

The authors declare they have no conflict of interest.

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Ethical Statement

This study was approved by the MHS (Maccabi Healthcare Services) Institutional Review Board (IRB) 0068-22-MHS. Informed consent was obtained from the patients.

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Figures

Figure 1

Patient journey timeline. Top (green): Patient 1. Bottom (blue): Patient 2. The X axis represents days from first symptom.