Genital monkeypox superimposed on co-incident sexually transmitted infections in AIDS patient; a case report

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ABSTRACT
Monkeypox outbreaks were, until recently, mostly confined to Africa but a currently expanding worldwide outbreak has recently been designated a global emergency by the World Health Organization. Genital manifestation is common and can be confused with sexually transmitted infection (STI), posing a diagnostic challenge. We herein report a case of genital monkeypox superimposed on multiple co-incident STIs in a HIV patient and describe characteristic clinical findings and management.

1. Introduction

Monkeypox is an orthopoxvirus, similar to smallpox, that was first identified in the 1950s, with the first human case reported in 1970. The first reported cases outside Africa were in the central USA in 2003 in 81 patients with a history of close contact with prairie dogs and other mammals. More recently, a 2022 worldwide outbreak has triggered a cascade of public health concern.1–3 Monkeypox classically presents with a nonspecific systemic prodrome followed by a progressive vesicular rash. Differential diagnosis can be complicated by overlapping clinical presentation with more common infectious agents but can ultimately be confirmed with laboratory analysis. Clinical courses are most often self-limiting though there may be a role for post-exposure prophylaxis and/or antiviral therapies on a case-by-case basis. We herein present a complex case of monkeypox with genital manifestation superimposing on multiple coincident sexually transmitted infection in an HIV patient.

2. Case presentation

A 28-year old male with a history of HIV diagnosed in 2016 and poor compliance with antiretroviral therapy (Biktarvy) presented to the emergency department with painful penile swelling and ulcerative lesions. Pain and swelling began 8 months prior to presentation, with lesions appearing a few weeks prior to presentation. Notably, CD4 count was 97,000.

Physical exam was notable for significant edema and tenderness of the phallus, with encasement of the glans with edema and fibrinous possibly localized necrotic tissue, as well as diffusely scattered and well-circumscribed umbilicated lesions throughout the scrotum and phallus (Fig. 1). He also had bulky, palpable bilateral inguinal lymphadenopathy without tenderness and a fungating perirectal mass. A CT scan confirmed lymphadenopathy involving the iliac and inguinal chains, and soft tissue swelling/edema involving the penis and abdominal wall.

On infectious workup, genital tissue culture was positive for Streptococcus pyogenes (Group A) and Candida albicans, while a urethral swab was positive for Chlamydia trachomatis and Herpes simplex virus (HSV 2). Serum serologies indicated reactive treponemal and nontreponemal tests of active Hepatitis C. On hospital day 4, monkeypox infection was also confirmed by a PCR test. Glans swelling, ulceration and purulence progressed through hospital day 5–6 (Fig. 2) but the patient retained ability to void per urethra with minimal post void residual volume.

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Fig. 1. Interval physical exam findings on day of admission #1-4.

Fig. 2. Interval physical exam findings on day of admission #5-6.

Fig. 3. Interval physical exam findings on day of admission #7-9.
refused recommended suprapubic tube insertion. He was treated with ampicillin transitioned to cefdinir, fluconazole, penicillin G benzathine, valacyclovir, doxycycline, topical nystatin and Bactrim oral suspension. Given confirmed monkeypox infection in an immunocompromised state, tecovirimat x a 14-day course was initiated. He demonstrated slow but demonstrable improvement in his exam during hospital days 5–9 (Fig. 3).

3. Discussion

Prior outbreaks of monkeypox have been linked to travel in endemic areas spanning Western and Central Africa, zoonotic transfer via bodily fluid contact, and human-to-human via close contact with infectious lesions or bodily fluids, notably during sexual intercourse. Additional data supports the hypothesis of spread via respiratory droplets and vertical transmission from mother to fetus during pregnancy. Children and patients with known immunocompromised status are considered at risk populations. Prior outbreaks of monkeypox have been linked to travel in endemic areas spanning Western and Central Africa, zoonotic transfer via bodily fluid contact, and human-to-human via close contact with infectious lesions or bodily fluids, notably during sexual intercourse. Additional data supports the hypothesis of spread via respiratory droplets and vertical transmission from mother to fetus during pregnancy. Children and patients with known immunocompromised status are considered at risk populations.3–5

Monkeypox infection is characterized by a prolonged incubation period of approximately 5–21 days after contact, with symptoms typically manifesting systemically, with nonspecific findings of fever, chills, myalgias, lymphadenopathy, and fatigue followed by a progressive rash 1–4 days later that spreads in a centrifugal pattern. The lesions can vary in number and distribution; though often seen localized on the face, oral mucosa, extremities, and genitals. In the current outbreak, painless anogenital lesions generally appearing without a prodrome after sexual contact with infected persons, including men who have sex with men have been reported.4 The lesions may be painful or pruritic but are thought to be self-limiting with clinical resolution 1–2 weeks after presentation.

The diagnostic approach to monkeypox is complicated by the novelty of the outbreak, limited existing literature, and few confirmed cases. Diagnosis can be made using laboratory polymerase chain reaction testing for monkeypox virus DNA, serologic testing of anti-orthopoxvirus IgM antibody, histologic and electron microscopy. Notably, symptoms may mimic more common infectious etiologies, including but not limited to: herpes simplex, varicella-zoster, syphilis, lymphogranuloma venereum, chancroid, gonorrhea, chlamydia, and smallpox. Clinical presentation, multidisciplinary work-up, and laboratory testing all contribute to narrowing the differential diagnosis.

Our patient’s clinical course and lesions mirror the few other case reports in the literature reporting on urologic findings of monkeypox but disseminated disease and prolonged healing highlight the contribution of our patient’s immunodeficiency. Our case differs from previous reports in that the monkeypox infection was superimposed on multiple co-incident STIs, resulting in significant penile edema and pain which hindered voiding. Although the patient refused urinary diversion by temporary cystostomy which we believe would have facilitated faster resolution of bacterial and fungal infections, his clinical exam gradually improved with intensive anti-microbial and anti-viral therapy. Although clinical experience with complex genital monkeypox infection remains limited to date, we advocate conservative management in the absence of clinical evidence of necrotizing or life-threatening systemic infection.

4. Conclusion

With increasing incidence of monkeypox worldwide, healthcare providers must be aware of clinical signs and symptoms; urologic presentations may overlap with sexually transmitted infections thus presenting a difficult diagnostic dilemma. In immunocompromised patients, care must be taken to ensure efficient time to diagnosis to initiate effective treatment plans with supportive, medical, and possible surgical options.

Submission Statement

This work has not been previously published, is not under consideration elsewhere, and is approved by all authors listed. If accepted, work will not be published elsewhere in the same form, including electronically, without the written consent of the copyright-holder.

Patient Consent

Verbal and written consent were obtained by the patient to share their story, clinical findings, and imaging prior to publication.

Declaration of competing interest

MS: No conflict of interest. No financial disclosures.
SM: No conflict of interest. No financial disclosures.
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