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Case Report

Severe Mpox and Uncontrolled HIV Co-Infection in Lagos, Nigeria – A Case Report

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Abstract

Mpox, a re-emerging orthopoxvirus infection, shares clinical similarities with smallpox but is typically less severe. However, immunosuppressed individuals, including those with uncontrolled HIV infection, are at risk for severe and atypical clinical presentations of mpox. We report the case of a 40-year-old Nigerian man living with HIV who was non-adherent to antiretroviral therapy (ART) and presented with extensive vesiculopustular eruptions that evolved into vegetative, ulcerated plaques accompanied by fever, lymphadenopathy, and significant weight loss. Laboratory evaluation showed profound immunosuppression (CD4 <20 cells/µL), and polymerase chain reaction (PCR) testing for mpox was positive. He required 14 weeks of inpatient care, including supportive therapy, broad-spectrum antimicrobials, and intensive wound management. Mpox-specific antiviral therapies were unavailable. Although he achieved clinical recovery, he developed post-inflammatory alopecia, dyspigmentation, and significant psychological distress. This case highlights the risk of severe and prolonged mpox in people living with advanced HIV, the importance of early recognition and microbiological confirmation via PCR, and the need for multidisciplinary supportive care, including infection control, wound and skin management, ART optimisation, and mental-health support. Mpox-specific antivirals should also be made more accessible for patients with severe disease.

Keywords: severe mpox; HIV; co-infection; cutaneous manifestation

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Quick Response Code:

Introduction

Mpox is a reemerging infectious disease caused by a DNA virus of the orthopoxvirus genus and the poxviridae family.[1] While it is generally less severe than the similar but eradicated smallpox, recent international mpox outbreaks have highlighted its global relevance.[1,2] The 2022- 2023 global outbreak, caused by Clade IIb, affected over 100,000 people across 105 countries.[2] The recently identified Clade 1b is responsible for an ongoing outbreak in East Africa, prompting renewed public health concern.[2] Nigeria experienced a resurgence of mpox in 2017 after a 39-year hiatus and has since reported cases regularly.[3]Waning smallpox herd immunity, climate change, migration, and conflict may be contributing to rising mpox cases.[1,3]Mpox transmission exhibits both zoonotic and anthropophilic transmission, including sexual transmission, which was well-documented in the 2022 global outbreak, where mostly men who have sex with men (MSM) were affected.[2,4] Identified risk factors include male sex, younger age and HIV infection.[3-5] Immunosuppression is associated with severe and atypical presentations of the disease.[3-5]This case report details the presentation and management of severe mpox with extensive, atypical skin lesions in a Nigerian manliving with HIV but with poor treatment adherence,occurring just before the global mpox outbreak.

Case Report

A 40-year-old Nigerian man presented to Mainland Hospital Yaba, also known as the Infectious Diseases Hospital, Lagos, in January 2022 with a two-week history of vesiculopustular lesions on the face, chest, upper arms, and genitals, preceded by fever and myalgia. He reported unprotected sexual contact with a male partner who had similar lesions in the pubic area. There was no history of contact with animals. He had been diagnosed with HIV seven years prior, but was non-adherent to antiretroviral therapy (ART)and could not recall his ART regimen. Examination showed extensive vesicular and papulopustular lesions with crusting over 50% of the body surface area, including the face, palms and soles, with significant axillary and inguinal lymphadenopathy. Initial differentials included disseminated molluscum contagiosum, disseminated varicella-zoster infection, and mpox. The patient initiallydeclined admission but re-presented two weeks later with severe weakness, cachexia, more extensive ulcerative lesions, and psychological distress. He had vegetative ulcerations on the head, neck and trunk, and pressure ulcers on the gluteal and calcaneal regions. (Figures 1 & 2) Investigations showed a CD4 count of <20 cells/μL, neutrophilia, and an elevated ESR of 89 mm/hour. Urinary TBlipoarabinomannan(LAM), Hepatitis B surface antigen and Hepatitis C antibody testing were negative. Mpox diagnosis was confirmed by polymerase chain reaction (PCR) of lesional swabs collected from an intact crustin January 2022, and the test was performed at the Nigeria Centre for Disease Controlnational reference laboratory in Abuja. Varicella-zoster virus (VZV) PCR of lesional swabs was negative. Wound cultures from a sacral ulcergrew *Proteus mirabilisspp.*sensitive to quinolones and cephalosporins. Contact tracing identified no additional cases.

Second-line antiretroviral therapy (lamivudine, tenofovir, and dolutegravir) was commenced two weeks post-admission, after baseline laboratory investigations, in accordance with national guidelines. Empiric oral acyclovir was administered pending Mpox and VZV PCR results, but was continued due to the very low CD4 count, in addition to oral fluconazole and co-trimoxazole. Intravenous levofloxacin was administered based on wound culture results, and intravenous fluids, analgesia, oral vitamins C and E, zinc and a high-protein diet were also given.Table 1 details the patient's treatment regimen.Mpox-specific antivirals (tecovirimat and brincidofovir) and vaccinia immune globulin were not available, and there were no local compassionate access programs. Skin treatment involved daily antiseptic baths, emollients (liquid paraffin and petrolatum), and daily wound dressing with petrolatum-impregnated gauze and biopolymer-based dressings. Sulphur salicylic acid ointment (10%) and 10% urea cream were used as keratolytics on hyperkeratotic lesions. He also had psychotherapy.

He remained admitted for 14 weeks, during which the skin lesions slowly healed. Other than sepsis, he did not develop other systemic sequelae associated with severe mpox and was discharged in stable clinical condition. However, residual atrophic scarring, dyspigmentation (hypo- and hyperpigmentation), and scarring scalp alopecia persisted, and he developed depression and suicide ideation due to the impact of these cutaneous sequelae on his physical appearance. (Figure 3a&b)He is currently undergoing psychotherapy with a clinical psychologist, aesthetic treatment with topical retinoids andchemical exfoliants for atrophic scarring and hyperpigmentation, and phototherapy for post-inflammatory hypopigmentation.

Table 1: Patient's treatment regimen (Severe mpox and HIV coinfection)[5,7-10]

Drug	**Dose**	**Indication**	**Weeks on Admission**
IV 0.9% saline	500mls 6hrly + 3cc Vitamin B complex and 2cc Vitamin C in each pint	Hydration	0-3
IV paracetamol	900mg 8 hourly	Analgesia, antipyresis	0-3
IV levofloxacin	500mg OD	Sepsis, based on wound cultures	0 - 4
Oral Acyclovir	800mg QDS	Pre-PCR confirmation for VZV post-CD4 count due to CD4+ <50/ul	0 -12
Oral fluconazole	200mg OD	CD4+ <100/ul	0-14
Oral cotrimoxazole	960mg BD	CD4+<100/ul	0-14
Oral Cefixime	200mg OD	Wound sepsis, based on wound culture	5-12
Oral lamivudine tenofovir&dolutegravir 50mg (fixed dose combination)*	Oral lamivudine 300mg, tenofovir 300mg, dolutegravir 50mg (fixed dose combination once daily	Anti-retroviral therapy	3 - 14
Oral Vitamin C*	500mg daily	Antioxidant,wound healing	3-14
Oral Vitamin E	400iu daily	Antioxidant, wound healing	3-14
Oral zinc*	50mg daily	Wound healing	3-14
Oral diclofenac	50mg twice daily	Analgesia	3-5

Petroleum-impregnated gauze	Daily wound and lesional dressing	Treatment for crusts and ulceration	0-9
Biopolymer-based dressing	Daily wound dressing	Treatment for crusts and ulceration	0-9
pH-balanced cleanser*	Daily skin cleansing	Skin cleansing	1-14
Liquid paraffin + petroleum jelly*	Twice daily application	Emollients	1-14
20% Sulphur salicylic acid ointment + 10% urea ointment *	Twice daily application	Keratolytics for vegetative lesions	3-14
Daily – Thrice weekly dilute bleach baths	Daily baths	Antiseptic, anti-inflammatory	1-14
High protein diet*	Daily consumption of 80-100g of protein	Nutritional support	2-14

**** - continued after dischargeOD – once daily; BD- twice daily, QDS – four times daily***

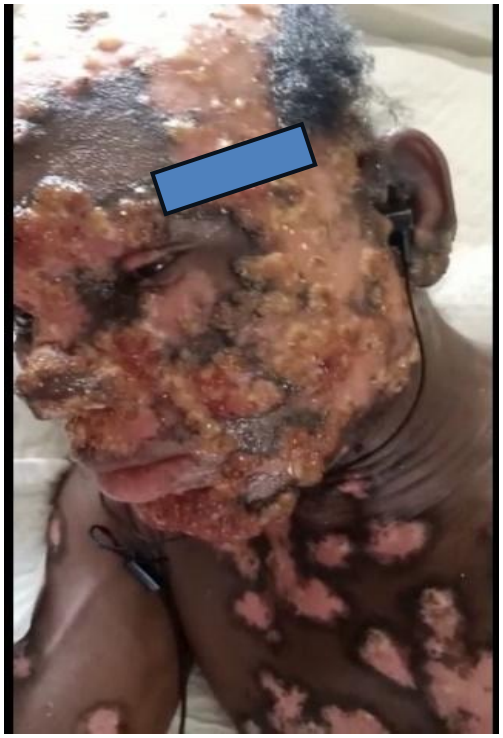
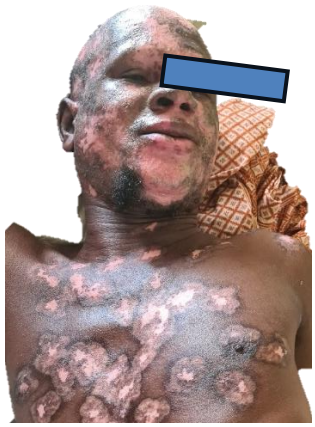


Figure 1- Three weeks post-presentation with extensive vegetative and ulcerative lesions on the face, chest and back



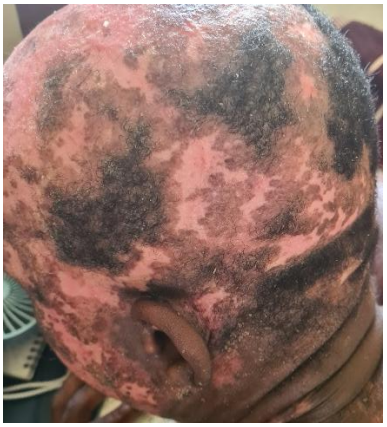


Figure2a and 2b- Three months post-presentation (at discharge)with hypo- and hyperpigmentation,and scarring alopecia

Discussion

This case report documents severe and prolonged mpox in aHIV-positive male, non-adherent to ART, just before the 2022 global mpox outbreak. Mpox infection is typically self-limiting, with a prodromal phase of fever, headaches, and myalgia, followed by skin eruptions that progress from macules to vesicopustules and crusts.[1-3]Lymphadenopathy often distinguishes mpox from similar conditions such as varicella zoster.[3] However, in immunocompromised states, such as uncontrolled HIV infection or following organ transplantation, mpox can become severe, complicated, and prolonged.[5-8]Furthermore, with severe mpox, the clinical presentation may make it difficult to distinguish from other severe dermatoses. Disseminated varicella-zoster, disseminated histoplasmosis, molluscum contagiosum, or pemphigus vegetans can also present with widespread pustules, crusts or vegetations.[9] This underscores the importance of good clinical history, an index of suspicion, skin biopsy and PCR testing.[9]

It is uncertain whether genomic sequencing was performed on this patient's isolate; therefore, direct clade assignment cannot be made. However, a recent study reports that 159 isolates from Nigeria obtained in 2022 were identified as Clade IIb, including Clade IIb B1, the dominant phylogenetic type during the global mpox outbreak.[10]

Mpox and HIV co-infection were well-reported during the 2022-23 mpox outbreak.[4,5] However, HIV was only associated with severe mpox when the CD4 counts were low.[5-8]Extensive vegetative and ulcerative mpox skin lesions resembling pemphigus vegetans in HIV patients with low CD4 counts, as seen in this case, have been documented by other authors.[6-8]This suggests that $CD4^+$ T-cell immunity plays a major role incontrolling mpox infection.[6-8]Systemic complications like respiratory or renal failure are also more likely in such patients.[5-7]Specific antiviral therapies for severe mpox, liketecovirimat, brincidofovir, and intravenous vaccinia immunoglobulins,areunavailable in Nigeria.[6,9] Supportive treatment, like hydration, broad-spectrum antibiotics to manage secondary bacterial infections, nutritional therapy, and psychological support, remains the mainstay of treatment.[8,9] Although acyclovir is ineffective against mpox, it was given prior to confirmation and afterwards as prophylaxis for opportunistic viral infections due to a CD4 count <100µL.[6-8]

Appropriate management of skin lesions is imperative to minimise cutaneous sepsis and long-term cutaneous sequelae.[9]GentlepH-balanced cleansers, antiseptic or saline baths, and generous use of bland emollients such as liquid paraffin or unperfumed petrolatum arerecommended.[9]Deroofing skin lesions or the application of caustic agentsis not advised, but denuded lesions can be covered with a light dressing or petrolatum-impregnated gauze.[9]Mpox lesions are infectious until they form dry scabs; therefore,

adequate infection control precautions must be taken with skin lesions and fomites.[9]Keratolytics may be helpfulfor post-infection hyperkeratotic skin lesions. Early and appropriate treatment can minimise scarring and dyspigmentation and subsequent psychological distress.[5,6,9] Late presentation and treatment may have contributed to the significant scarring and dyspigmentation experienced by the patient in this report.

The psychological impact of mpox should not be overlooked, and mental health support is essential.[5,6,9] Patients with severe mpox often suffer anxiety, depression and social withdrawal due to the stigma surrounding mpox, and this may be worsened by visiblepost-infection scarring and dyspigmentation.[5]

In conclusion, severe mpox ismore common in advanced or uncontrolled HIV infection. Prompt diagnosis, ART adherence, comprehensive supportive care, nutritional therapy, and psychological support are essential. Community sensitisation and surveillance on mpox are also crucial, and broader access to mpox-specific antivirals and vaccines is urgently needed, especially in endemic, developing countries.

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Informed consent: Written informed consent was obtained from the patient to share this case report and clinical photographs. No identifiable details have been included in this case report, and clinical photos include attempts at masking.

Conflict of Interest – The authors have none to declare.

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