ACG CASE REPORTS JOURNAL

CASE REPORT | COLON

Persistent Gastrointestinal Symptoms in Human Mpox

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ABSTRACT

Mpox is a zoonotic disease caused by the double-stranded DNA Mpox virus (MPXV). Little information has been published regarding the gastrointestinal system and MPXV. This case presents a patient with active ileitis and 60 days of functionally limiting diarrhea after confirmation of MPXV. A diagnosis of postinfectious irritable bowel syndrome was made; however, despite a lack of apparent viral shedding on stool polymerase chain reaction, it remains possible that prolonged diarrhea represented direct sequelae from the MPXV disease. This is important from a public health perspective, suggesting that our ability to recommend removal from isolation may need to be reconsidered.

KEYWORDS: colon; colonoscopy; infectious diarrhea; postinfectious irritable bowel syndrome; Mpox

INTRODUCTION

Mpox is a zoonotic disease caused by the enveloped double-stranded DNA Mpox virus (MPXV), endemic to Nigeria and the Central African Republic. Since May 2022, it has gained attention for its spread in nonendemic regions.[1,2] The clinical presentation of MPXV has been documented as fever and lymphadenopathy, followed by lesions that progress through several stages.[1,3] In this case, we present a patient with active ileitis and prolonged diarrhea after confirmation of MPXV.

CASE REPORT

A 33-year-old man presented to the emergency department 6 days after the onset of fever, fatigue, and typical MPXV lesions. The lesions were swabbed and sent for MPXV polymerase chain reaction (PCR), which confirmed the diagnosis of MPXV. The patient reported multiple recent anonymous male partners. He denied travelling outside the province, but reported 1 sexual contact from a different province. The emergency department physician contacted public health on this day to seek guidance on home isolation and contact tracing.

On day 14 of symptom onset, the patient reported 10–15 loose brown/green liquid bowel movements per day, with 15 pound weight loss since symptom onset. Public health advised stool culture and viral PCR. These were negative for ova and parasite; bacteria including *Yersinia enterolytica*; and noroviridae, astroviridae, adenoviridae, rotaviridae, and sapoviridae. Per the direction of the Medical Officer of Health, the patient was considered recovered after the skin lesions healed, and he was released from isolation with guidance to use condoms for sexual activity for 8 weeks and no donation of body fluids. On day 24, a phone consultation was held with the Medical Officer of Health, during which the patient reported a continuation of gastrointestinal (GI) symptoms. A gastroenterology consultation was placed.

On day 26, the patient was reviewed by gastroenterology regarding ongoing nausea and cramping with diarrhea. The patient's medical history included irritable bowel syndrome-mixed (IBS-M) constipation alternating with 3–4 Bristol type 5–7 stool per day

ACG Case Rep J 2023;10:e01101. doi:10.14309/crj.0000000000001101. Published online: July 8, 2023

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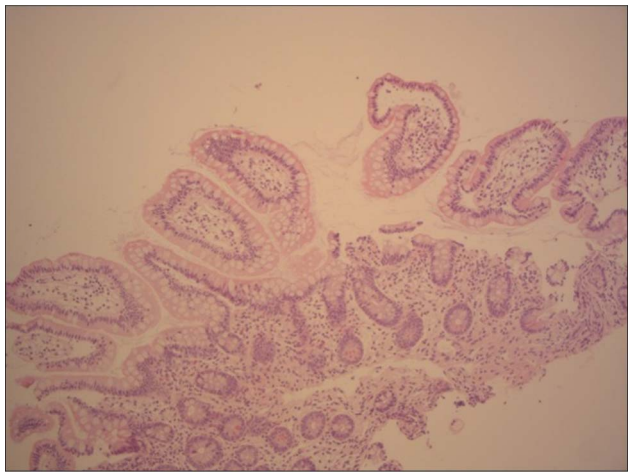

Figure 1. Normal ileum biopsy from the patient's colonoscopy in 2021. Hematoxylin and eosin ×100 magnification of the normal ileum.

and gastroesophageal reflux disease. The patient had had a colonoscopy in 2021 with normal colonic and ileal biopsies, ruling out other causes of baseline diarrhea and constipation (Figure 1). The cardiorespiratory and abdominal examinations were unremarkable. Skin inspection revealed no active lesions.

On day 40, the patient continued to have 8 stools per day at Bristol 5-8 consistency. He was unable to work. A stool PCR platform for MPXV was sent 44 days after symptom onset; a limitation was that this platform was only accredited for use in skin lesions. It returned as negative. With negative stool investigations, the top differential diagnosis was IBS, exacerbated by Mpox or microscopic colitis. Gastroscopy, colonoscopy, and random pansegmental biopsies were performed on further workup. Colonic biopsies were entirely normal. Ileal biopsies demonstrated active ileitis but were otherwise normal (Figure 2). Notably, the patient denied nonsteroidal anti-inflammatory drug use. HIV, fecal elastase, and quantitative immunoglobulin results were normal.

The patient was given as-needed therapy with ondansetron and loperamide at 4–8 mg/d. The plan was to repeat colonoscopy with biopsies when the patient was completely asymptomatic. At day 60, the patient's bowel motions returned to baseline. At that point, he declined further endoscopic investigations.

DISCUSSION

There is little information published regarding the GI system and MPXV. In one study, involvement of the anorectal mucosa was reported as the presenting symptom in 12% of cases.[4] The main symptoms included anorectal pain, tenesmus, diarrhea, or a combination of these symptoms.[4] In a recent report, 5.9% of patients with MPXV presented with watery diarrhea, commonly associated with nausea and vomiting.[5] A second study analyzed 226 cases reported at 18 sites in 15 countries. In this study, 6% of patients presented with diarrhea and 4% with tenesmus.[6]

In the presented case, the patient had an onset of diarrhea and nausea on day 14, which persisted and was functionally limiting until 60 days after symptom onset. This patient's GI symptoms lasted long after the skin lesions resolved and persisted despite negative stool tests for MPXV.

With a negative workup for organic causes, the patient's prolonged nausea and diarrhea were attributed to postinfection IBS (PI-IBS). PI-IBS has been associated with certain bacterial, viral, and protozoal infections and is well-documented in the literature.[7] It is possible that patients with IBS with a mixed or

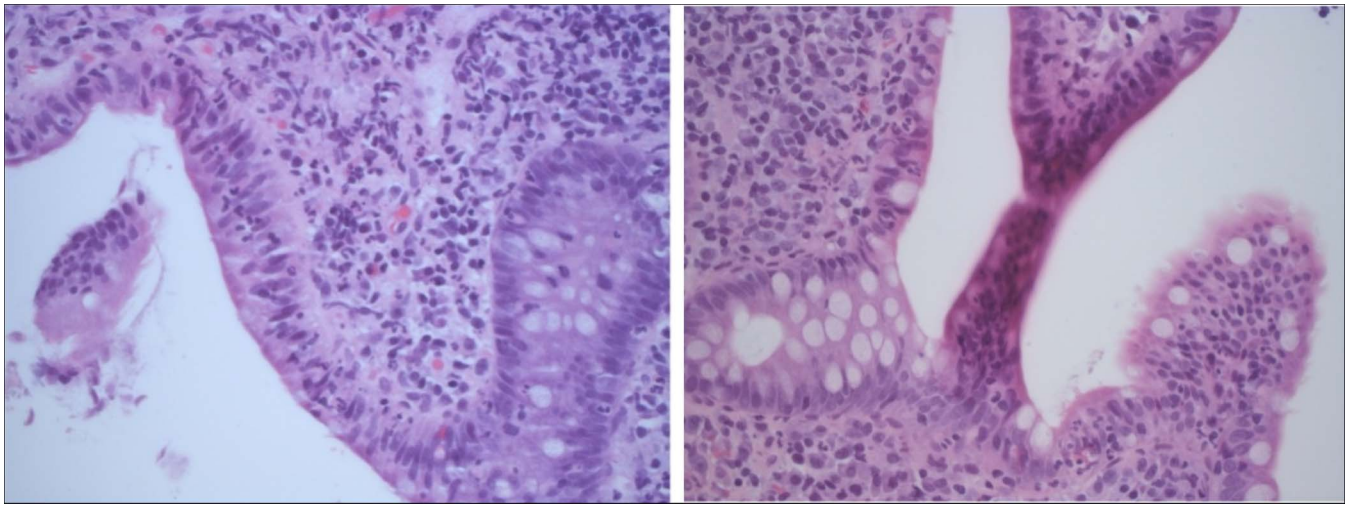

Figure 2. Ileum biopsy showing active ileitis, 26 days after positive polymerase chain reaction for Mpox virus. Hematoxylin and eosin ×400 magnification. Neutrophilic infiltrate within the surface epithelium and lamina propria.

predominant constipation subtype could develop an alternative subtype after an infectious insult. A study completed in 2020 looking at PI-IBS found that of 34 patients with IBS with constipation (IBS-C), only 17 retained their original subtype after Campylobacter enteritis infection and the rest developed IBS-M or D (IBS-mixed or diarrhea subtype).[7]

This case presents the possibility that prolonged diarrhea represented direct sequelae from MPXV disease, where viral shedding was not apparent on our PCR testing. Only 2 studies detected MPXV DNA by PCR in feces; however, a replication-competent virus has not been isolated from feces, and transmission has not been directly linked to exposure to feces.[7]

Epidemiologic data are currently insufficient to support feces as a source of infection.[2] Although the stool PCR test for MPXV was negative in this case, this needs to be interpreted with great caution because the PCR platform was not calibrated for stool samples. This is important from a public health perspective, where our ability to recommend removal from isolation may need to be qualified by ongoing restrictions of sexual activity should there be further evidence of ongoing viral shedding in the stool of patients with persistent diarrhea.

To date, there are no specific treatments of MPXV infection. However, antiviral drugs developed for patients with smallpox may be beneficial.[1] Clinical treatment is based on supportive care, such as using antidiarrheals for symptom management, as in this case.[1] This case presents a unique presentation of MPXV and indicates that diarrhea and nausea are important symptoms to consider as part of the MPXV symptom constellation. The clinical course in this patient, either because of PI-IBS or ongoing MPXV virus shedding, suggests that further study of MPXV and the GI system would be beneficial.

DISCLOSURES

Author contributions: M. MacDonald, S. Carpentier, and K. Barker were all involved in writing and editing the case report. I. Umar provided the ileal biopsy figures and a description of each. S. Carpentier is the article guarantor.

Acknowledgment: The authors acknowledge the work of Public Health Nurse Krista Connell for her contribution.

Financial disclosure: None to report.

Informed consent was obtained for this case report.

Received January 8, 2023; Accepted June 12, 2023

REFERENCES

1. Luo Q, Han J. Preparedness for a monkeypox outbreak. *Infect Med*. 2022; 1(2):124–34.
2. Centers for Disease Control and Prevention. *Monkeypox Signs and Symptoms*. Centers for Disease Control and Prevention. (https://www.cdc.gov/poxvirus/monkeypox/index.html). Published September 7, 2022. Accessed December 18, 2022.
3. Catala A, Clavo-Escribano P, Riera-Monroig J, et al. Monkeypox outbreak in Spain: Clinical and epidemiological findings in a prospective cross-sectional study of 185 cases. *Br J Dermatol*. 2022;187(5):765–72.
4. Gessain A, Nakoune E, Yazdanpanah Y. Monkeypox. *N Engl J Med*. 2022; 387(19):1783–93.
5. Mungmunpuntipantip R, Wiwanitkit V. Diarrhea and monkeypox: A consideration. *Rev Esp Enferm Dig*. 2022;114(12):763–4.
6. Angelo KM, Smith T, Camprubí-Ferrer D, et al. Epidemiological and clinical characteristics of patients with monkeypox in the GeoSentinel Network: A cross-sectional study. *Lancet Infect Dis*. 2023;23(2):196–206.
7. Berumen A, Lennon R, Breen-Lyles M, et al. Characteristics and risk factors of post-infection irritable bowel syndrome after campylobacter enteritis. *Clin Gastroenterol Hepatol*. 2021;19(9):1855–63.e1.