MPox virus: an unusual aetiology of peritonitis

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ABSTRACT

We describe a rare case of severe disseminated monkeypox (MPox) virus infection complicated by peritonitis in a 44-year-old man living with well-controlled HIV. The patient was successfully treated with tecovirimat without requiring surgery. MPox should be considered in the differential diagnosis of non-bacterial peritonitis in patients at risk of infection.

Learning points

⇒ VIH infection
⇒ Viral peritonitis
⇒ Monkeypox infection

BACKGROUND

MPox can occasionally be severe and require hospitalisation.[1] Peritonitis has not been reported yet as a complication of disseminated monkeypox MPox in humans. However, experimental studies have demonstrated the possibility of clinical peritonitis in cynomolgus macaques infected with MPox virus via aerosolisation,[2 3] with evidence of poxviral antigen in mesothelial cells.[3]

PRESENTATION AND INVESTIGATIONS

A 44-year-old homosexual man living with virologically suppressed HIV infection and showing a CD4 count of 720 cells/mm^3 was hospitalised with a diagnosis of secondary traumatic peritonitis. The previous day, the patient had suffered a sigmoid colon perforation through anal insertion of a foreign body in the course of an unprotected sexual encounter. He underwent surgical resection of the rectosigmoid colon, peritoneal lavage and lateral sigmoid colostomy. Microbiological investigations were inconclusive. The postoperative course was uneventful, and the patient was discharged home 3 days later.

Seven days later, the patient was readmitted for abdominal pain and rising inflammatory biomarkers. A CT scan showed intraperitoneal effusion suggestive of a recurrence of peritonitis. The explorative laparotomy showed no sign of purulent effusion or bowel perforation. Empirical antibiotic treatment with piperacillin plus tazobactam was offered. The peritoneal fluid was sterile. The histological report described a 'sterile inflammatory peritoneal effusion'.

Five days after the second laparotomy, the patient complained of abdominal and perineal pain with anal discharge, suggesting anorectal inflammation. Simultaneously, a papular-vesicular rash developed over the entire body with lesions also affecting the perianal and rectal mucous membranes, suggesting the diagnosis of MPox. A cutaneous swab was positive for MPox virus by PCR. The following days, fever, inflammatory markers and oxygen desaturation worsened. Profuse papular skin lesions and ulcerations of colon mucous membranes developed around the colostomy orifice (figure 1). A CT scan showed bilateral lung effusions, diffuse infiltration of mesenteric fat and a septate peritoneal effusion suggesting recurrent peritonitis. A blood MPox virus PCR was highly positive (19 cycles threshold (Ct)). A few days later, after transcutaneous (CT-guided) sampling of the peritoneal effusion, a treatment with fourth-generation cephalosporin was started. Bacterial cultures of the effusion remained negative, whereas the MPox virus PCR was positive (13 Ct); a simultaneous blood sample was also confirmed positive (23 Ct).

TREATMENT

Since clinical and laboratory data supported the diagnosis of severe disseminated MPox, treatment was started with tecovirimat 600 mg two times a day intravenously for 14 days. The laboratory safety conditions imposed for MPox testing did not allow testing samples for other STIs. Pre-emptive treatment for *Chlamydia trachomatis* (lymphogranuloma venereum) was offered with doxycycline 200 mg four times a day for 21 days. The patient's

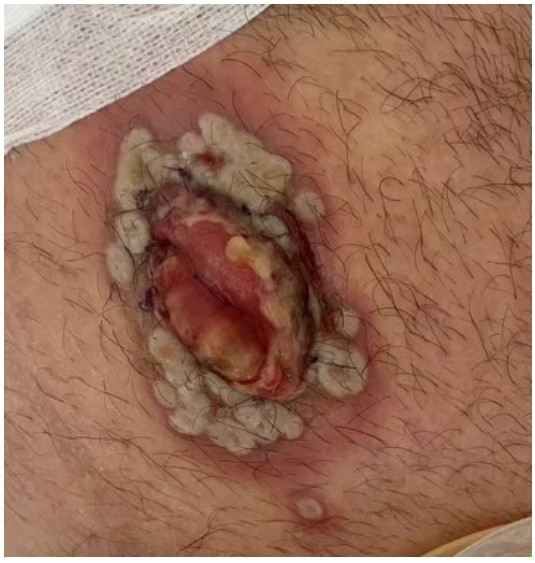

Figure 1 Peristomal muco-cutaneous lesions in an MPox peritonitis. MPox, monkeypox.

health condition improved. The MPox blood PCR became negative 8 days after the beginning of antiviral treatment, followed by hospital discharge.

DISCUSSION

In the 2022 outbreak, MPox has been most commonly diagnosed (98% of cases) in men who have sex with men following close contact with infected skin, body fluids or respiratory droplets.[1 4] The median incubation time is 7 days (3–20 days).[1 4] Consistent with these data, in our case, the interval between the last sexual intercourse and the onset of postoperative abdominal complaints was 10 days, while the interval before the appearance of the skin rash was 15 days. Disseminated MPox is rare in immunocompetent patients. Our patient had no history of AIDS and no immune-compromising comorbidities; his nadir CD4 count was 271 cells/mm^3, and his most recent CD4/CD8 ratio was 0.7. Of note, the patient had no history of smallpox or MPox vaccination. His husband, vaccinated against smallpox in childhood, also had a skin rash at the same time with a skin swab positive for MPox virus by PCR, with a favourable outcome.

Viral peritonitis is rare and described in specific settings, like peritoneal dialysis, with a reported mechanism of primary or secondary peritonitis.[5–8] Herpes virus or enterovirus are the likely involved pathogens.[5–7] In this case, there were two possible modes of peritoneal involvement: haematogenous, through the viraemia or by contiguous spread from an anorectal infection. The peritonitis was treated with tecovirimat, which interferes with the orthopoxvirus surface protein VP37 and has been suggested for severe MPox in various guidelines.[1 9 10] Thus, this case indicates that a diagnosis of MPox peritonitis should be considered in people with a history of potential exposure in the previous 20 days and that medical treatment without surgical intervention is a possible treatment option.

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Contributors AC followed this patient then wrote and submitted this case report. MB followed and treated this patient and contributed to the writing of this case report. GG performed monkeypox virus PCR and cycles threshold values. JC contributed to the writing of this case report. CO operated this patient. ED followed and treated this patient. MC contributed to the writing and the submission of this case report.

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