Perioperative Management in a Patient with Monkeypox: a Case Report

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Abstract

Monkeypox is a contagious disease caused by the monkeypox virus. It is an emerging problem and a new challenge for anesthetic personnel. Knowing more about the disease will permit to elaborate new supportive methods to simplify the diagnosis and the proper management. This case report describes the diagnostic approach and management of an adult Thai patient with HIV infection, hepatitis B and C, syphilis infection, and a history of intravenous drug use. An ischioanal abscess was developed at his buttock and it urgently required the surgical drainage. The operation was successfully performed by using a combination of perianal block and intravenous sedation.

Keywords: infectious disease, Monkeypox, perioperative management

Introduction

Mpox, a preferred term of monkeypox by WHO, is a contagious disease caused by the monkeypox virus which belongs to the Orthopoxvirus genus of the Poxviridae family. Manifestations of typical Mpox are generalized skin rash that similar to smallpox-like rash at face and extremities, fever, and lymphadenopathy.[1-4] Mpox, first identified in a human in 1970 in the Republic of the Congo, has been the endemic disease in central and West Africa. There was a large outbreak in 2017-2018 and the current outbreak occurred in May 2022. The ongoing outbreak has appeared rapidly spread across 110 countries.[1,4]

The first confirmed case of Mpox in Thailand was reported in July 2022 in Phuket, and Mpox patients in Thailand have increased steadily over the past years. Although most cases are self-limiting disease, immunocompromised patients are prone to develop severe disease and complications such as cellulitis, abscess, pyomyositis, and necrotizing soft tissue

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infection which may need surgical drainage.[4,5] There are several concerns about Mpox patients in perioperative management.

Case report

A 27-year-old Thai male with HIV infection receiving antiretroviral drug (CD4 = 560 cells/mm^3, viral load not detected), hepatitis B, hepatitis C, syphilis infection, and a history of intravenous drug use, was 67-kg in weight and 175-cm in height. He complained of buttock pain for 3 days and was diagnosed complex fistula in ano and ischioanal abscess in his right buttock. The planned operation was incision and drainage. An anesthetist nurse visited for preoperative evaluation. In addition, he had a high-grade fever and a sore throat for 4 days, then developed a rash on his face and body. He was a man who had sex with men and recently had unprotected sex. His vital signs were body temperature of 38.9°C, blood pressure of 121/68 mmHg, pulse rate of 87 beats/min and respiratory rate of 18 times/min. The skin lesions were multiple discrete umbilicated erythematous papules and pustules on the erythematous base at the face, truncal area, and extremities; white tonsillar patches and umbilicated white papules on buccal mucosa (as shown below). His laboratory test showed leukocytosis (WBC 12,100 cell/microL, neutrophils 75%). An anesthesiologist and the infectious control department of the institute were notified regarding Mpox suspicion by the anesthetist nurse. The patient was transferred to an isolated unit.

The patient was worked with PCR for Mpox at nasopharynx, pus from ischioanal abscess and serum, which showed positive with CT ratio 23.03, 22.27 and 29.44, respectively. Empirical treatment of ischioanal abscess by intravenous ceftriaxone and metronidazole was started immediately. However, the patient still had a high-grade fever and an enlarging painful abscess. Accordingly, the surgeon decided to perform surgical drainage. Because Mpox was contact and droplet precaution, we wore the personal protective equipment (PPE): disposable gown, head cover, gloves, face-shield and N95 filter. The choice of anesthesia was perianal block combined with intravenous sedation. Therefore, aerosol-generating procedure was needed for oxygenation support. The negative pressure operating room was used for preventing transmission, like airborne precaution. Midazolam 3 mg, fentanyl 100 mcg, and propofol 120 mg were given intravenously for anesthesia during an operation. He received oxygen cannula 3 L/min, covering the nasal cannula with a surgical mask along an operation. After the operation, post-anesthesia care was done in the operating room for 15 minutes, then the patient was transferred to an isolated unit.

Discussion

Clinical presentations of Mpox in this outbreak differ from the past. Penile rashes, perianal lesions, ulcerative lesions, and vesicular rashes, painful inguinal lymphadenopathy,



Figure 1 Multiple discrete umbilicated erythematous papules and pustules on erythematous base at face (Left) White tonsillar patches and umbilicated white papules on buccal mucosa (Right)



Figure 2 Multiple discrete umbilicated erythematous papules and pustules on erythematous base at trunk



Figure 3 Complex fistula in ano and ischioanal abscess at right buttock

pharyngitis, and proctitis are prominent symptoms. Most patients are men who have sex with men.[1,2] The Centers for Disease Control and Prevention (CDC) advise healthcare providers to assess sexually transmitted infections (STIs): HIV, syphilis, herpes, gonorrhea, and other immunocompromising conditions in suspected and confirmed case of Mpox.[5,6] This patient was conducted for other STIs tests. Laboratory results indicated no other coinfection except his underlying conditions.

Immunocompromised patients, particularly untreated HIV, younger than 8 years of age, and pregnant, were at risk of severe manifestations.[6,7] Early treatment with direct therapy should be started before severe manifestations are observed in order to decrease morbidity and mortality.[5] Unresponsive ischioanal abscess was a severe manifestation of this patient. This is a life-threatening condition of deep soft tissue infection and may cause systemic toxicity especially in immunocompromised patients. Surgical drainage plays a role in eliminating infection, and broad-spectrum antibiotics, covering normal skin flora, including Streptococcus pyogenes and methicillin-sensitive Staphylococcus aureus (MSSA)[4], should be started. Nowadays, no drugs have been approved by the Food and Drug Administration (FDA) for specific treatment of Mpox. Although Tecovirimat has been studied in clinical trials, it has been used for treatment of Mpox in the United States and Europe. Tecovirimat inhibits the orthopoxvirus protein p37, blocking cell-to-cell viral transmission.[2,8] FDA and CDC recommended that Tecovirimat may be used for people with severe disease or who are more likely to get severely ill, like immunocompromised patients.[8,9] This patient received tecovirimat after hospitalization.

Our patient had an emergency condition, so we proceeded with surgery with infection control precautions. Any elective surgery should be postponed up to 4 weeks after onset of rash or until all skin lesions have recovered to smooth skin, which can imply that there is no concern for transmission.[1,9] Because of incubation period, exposed case with or without rash should be delayed for 21 days in elective surgery.[1] There are limitations on choosing the choice of anesthesia in our patient because he had rashes in the back area. The neuraxial anesthesia should be avoided in patients with back-lesion for 21 days from onset of rash.[3] During the period of viremia, neuraxial anesthesia may introduce the virus into the central nervous system. In general, neuraxial anesthesia is preferred to lower droplet exposure. There is a suggestion of using a pencil-point needle for spinal anesthesia for lesser viral penetrating into subarachnoid space.[3]

Although an epidural needle does not penetrate the dura, a larger size of needle can introduce more viruses as well. Thus, epidural anesthesia also should be avoided in patients who have lesions in the back. On the other hand, general anesthesia may be problematic in this patient due to oral mucosal pustules and tonsillar patches. These oral lesions can cause risk of trauma, airway edema, and bleeding during airway instrumentation.[3] For all the above reasons, intravenous sedation technique combined with a perianal block was chosen in this case.

Conclusion

Mpox manifestations in the current outbreak are more likely to be soft tissue infection and may worsen until surgery is

Table 1 Prevention of transmission in operation room[1,4,9]

Patient protection	Infected patients must wear a well-fitting medical mask disposable clothes cover all cutaneous lesions with dressings
Health care providers protection	PPE including N95 mask or PAPR disposable gloves eye protection isolation gown disposable plastic apron (in case of any potential fluid contact)
Transfer	Direct transfer to operating room Dispose bed sheet after transferring Clean the trolley
Peri-operative	Limited staff in OR Unnecessary equipment should be removed Aerosol-generating procedures should be performed in negative pressure room Recovery period in operation room
Bio-clean	Active ingredients of cleaning solutions Isopropyl alcohol, or Quaternary ammonium, or Ethyl alcohol, or The equivalent of the European label NF EN14476 A minimum 5-min exposure time

needed. Locoregional and neuraxial anesthesia are considered unless there are contraindications. Early detection is important for transmission control, healthcare workers' safety, and anesthetic plan.

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