CLINICAL VIGNETTE

Confirmed Mpox in a Pediatric Patient with Unknown Source of Infection

Priyanka Sharma, MD[1,2] and John D. Petersen, MD[1,2]

[1]University of California Los Angeles, Los Angeles, California
[2]Olive View-UCLA Medical Center, Sylmar, California

Case Presentation

A 9-year-old female presented to the Emergency Department (ED) for further evaluation and confirmatory testing of suspected mpox infection. Her foster mother first noted a skin lesion on the patient's right superior posterolateral thigh 1 week prior, and she underwent mpox polymerase chain reaction (PCR) at an outside hospital that same day. Three days later, the PCR skin test resulted positive for mpox virus. The foster mother was instructed by the Department of Child and Family Services (DCFS) to present to the ED for further medical examination and confirmatory testing. On history, the patient had no known sick contacts or exposures to infected individuals. There was no identifiable intimate contact with adults, including sexual abuse or sexual misconduct, which was independently corroborated by DCFS colleagues. The patient complained of pain at the rash sites but was otherwise asymptomatic. On initial examination, the child appeared well, was afebrile with all other vital signs within normal limits. Full-body skin exam revealed numerous tender, well-circumscribed, umbilicated papules on an erythematous base in various stages of healing on the bilateral lower extremities, abdomen, and face (Figure 1a). The largest lesion was a tender erythematous erosion on the right superior posterolateral thigh with central ulceration and overlying crusting with associated satellite lesions (Figure 1b). No lesions were noted in the anogenital region.

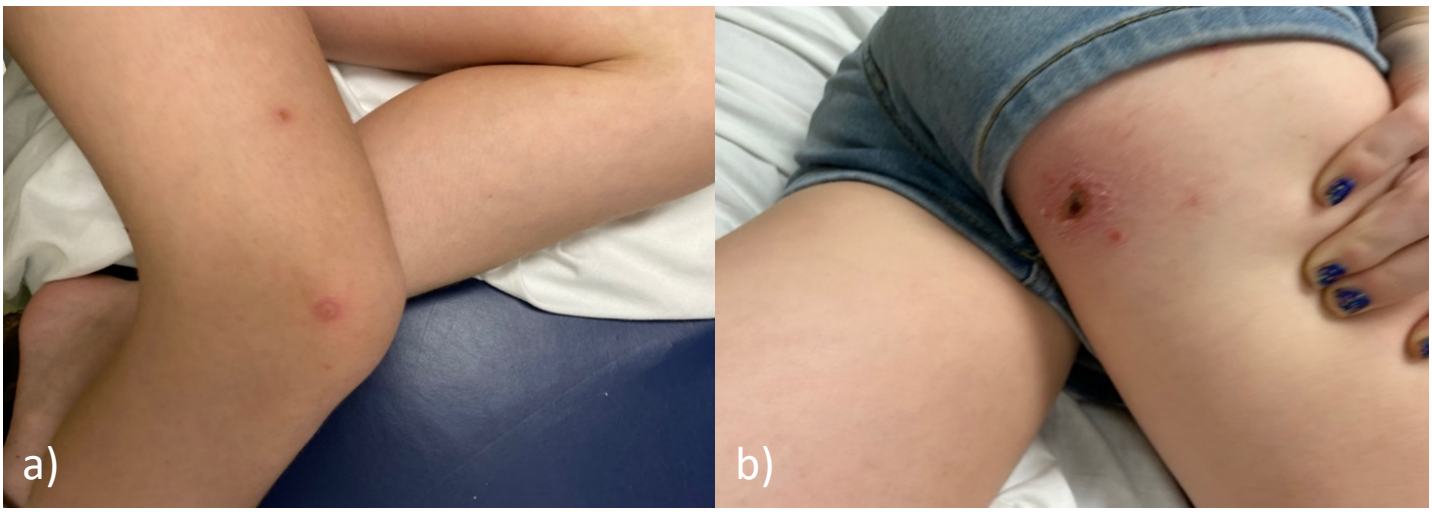

Figure 1: a) Well-circumscribed, umbilicated papule on an erythematous base seen over the right lateral anterior knee. b) Large erythematous erosion with central ulceration and overlying crusting noted on the right superior posterolateral thigh with few associated satellite lesions.

After consultation with the Los Angeles Department of Public Health, confirmatory serology testing was obtained, which eventually resulted positive for mpox IgG and IgM antibodies. Initially, the decision was made to defer antiviral therapy, as the patient was not immunocompromised or otherwise at high-risk for complications. The patient was discharged home from the ED with her foster family after her 4 foster siblings underwent post-exposure evaluation with oropharynx PCR and serology antibody testing for mpox. All the siblings' PCR tests returned indeterminate, but one sibling, as well as another close contact, tested positive for mpox antibodies (IgG and IgM) on serology. All close contacts remained asymptomatic.

At the patient's clinic follow-up three days later, she was initiated on therapy due to ongoing pain and the location of the lesions in sensitive anatomic sites. The patient was prescribed tecovirimat 400 mg by mouth twice daily for 14-days. After seven days of treatment, the patient demonstrated approxi-

mately 95% healing of her lesions and resolution of her pain. The patient did not report side effects while on tecovirimat and had no further symptoms or complications by the end of the two-week course.

Discussion

Mpox (formerly referred to as monkeypox) is a relative of the smallpox virus that is known to spread from humans to humans following close contact.[1,2] In 2022, the virus became increasingly prevalent in multiple countries outside of its endemic areas in Africa.[2] Most cases reported in the Americas have involved middle-aged males, many of whom are in high-risk groups, such as men who have sex with men.[3] The incidence in the pediatric population has remained very low during the current outbreak, especially in children ages 0-15 years.[4] Of those few cases described in a pediatric population less than 15 years of age, the majority appear to have had close exposure to an adult, usually a household contact, with confirmed mpox.[5-7]

Our case of a previously healthy 9-year-old female who tested positive for mpox deviates from the typical pattern of transmission noted in the United States, as she had no known exposures or sick contacts. There was no identifiable sexual abuse or misconduct, making community spread most probable. This illustrates the importance of including mpox on the list of differential diagnoses for a pediatric rash of unclear etiology. Compared to other common infectious pediatric lesions (such as herpes simplex virus, varicella zoster, bullous impetigo, and molluscum contagiosum), mpox initially presents as a discreet macular rash that evolves 1-2 weeks to papules, vesicles or pseudo-pustules, and often develops umbilication and end-stage pruritic crusting.[8] The rash is commonly painful and will usually appear within a few days of systemic symptoms, although our patient's course differed from this typical pattern.[9]

The gold standard for diagnosis is viral PCR testing of the skin lesions, and if multiple lesions are present, a sample of three lesions should be tested.[10] Serology testing may be useful to confirm a diagnosis of mpox, but the decision to do so should be made in conjunction with public health officials to avoid unnecessary testing that may not change clinical management.[11] Treatment is supportive care for mild cases, but antiviral therapy may be beneficial for patients with severe symptoms or who are at high risk for complications, including those who are immunocompromised. The current antiviral medication of choice is tecovirimat. Dosing of tecovirimat in the pediatric population is weight-based, and the current recommended treatment duration is 14 days. While the medication is typically well tolerated, the most reported side effects include abdominal pain, nausea and headaches.[10,12] Regardless of the decision to pursue treatment at the initial encounter, patients should have close outpatient follow up to monitor the progression of the disease and ensure adequate resolution of symptoms.

Conclusion

We present a pediatric patient with Mpox unknown source of infection, suggestive of community spread. Although most reported pediatric cases of mpox involve known exposure to a positive household contact, mpox should be included on the differential when evaluating suspicious rashes, even without known exposure. Antiviral therapy is indicated for patients at high risk for complications, including those with immunosuppression, but may be considered for otherwise healthy individuals with severe symptoms or with lesions in sensitive areas.

Acknowledgements

We would like to thank both the patient and her foster mother, both of whom provided consent for this case report.

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