

Disease Progression of a Chronic Mpox Case in the Crater Health District

Courtney Ayers, B.S, CIC Henrico District Epidemiologist Henrico and Richmond Health Districts







Background

- May 20, 2022, CDC issued a Health Alert Network (HAN) for Mpox infection in the United States and other non-endemic countries
- Mpox is a zoonotic disease
- The average incubation period for symptoms is 5-13 days
- No specific treatment for mpox virus infection
 - Antivirals developed for use in patients with smallpox may prove beneficial
- Clinicians should have a high suspicion for mpox when a person with rash has traveled to a country with mpox cases or had intimate contact with someone from online website or app



Symptoms

- Rash/lesions: firm, well circumscribed, deep-seated, and umbilicated
- Fever
- Chills
- Swollen Lymph Nodes
- Muscle Aches
- Malaise
- Headache



Transmission

- Can spread from infected animals to humans and person-to-person through respiratory secretions
- Skin-to-skin contact with infected body fluids (e.g., fluid from vesicles and pustules)
- Fomites (e.g., shared towels, contaminated bedding)

Testing

- Orthopoxvirus PCR testing done by swabbing a lesion with a dry swab
 - Submit swabs on multiple lesions (preferred to send two swabs per each lesion)



Investigation

- Saturday, November 12, 2022, a positive orthopoxvirus result detected via polymerase chain reaction (PCR) was reported to the Crater Health District
- Patient had presented to an urgent care on the November 9th with body rash

Virginia Case Count





Interview

- Patient reported anonymous sex in early October
- One sore on arm, one on leg, two on each side of the face, and some on or around his penis (rash onset 10/21/22)
 - Lesions already crusted over
- Other symptoms included enlarged lymph nodes and malaise
- Patient reported minimum pain
- Patient denied any immunosuppressing conditions like human immunodeficiency virus (HIV)
- Past medical history of type 1 diabetes





Post Interview

- Decision regarding need for Tecovirimat TPOXX was discussed with nursing
 - It was decided since the lesions were crusted over and patient was doing well, TPOXX would not be initiated
 - Followed up with patient that we would not be recommending TPOXX
- No Post Exposure Prophylaxis (PEP) was administered due to lack of information on sexual partner and no one else residing in the home
- Results received from urgent care showed patient also tested positive for HIV
 - Worked with Disease Intervention Specialist (DIS) to make sure patient was already aware of HIV status (had been contacted March 2022). Patient had been contacted multiple times to start treatment, but it was never initiated.
 - Multiple phone calls were made to follow up on HIV treatment, and we were not able to get back in touch.
 Patient voicemail was full, so no messages could be left.



1st Hospital Admission

Admitted 11/26/22, length of stay (LOS) 3 days

Disease Progression:

- Multiple vesicular lesions all over body with significant penile swelling
- Umbilicated lesion on center of forehead without purulence group of small patchy vesicular lesions on both cheeks

Labs:

• CD4 count less than 50

Treatments:

TPOXX started 14-day course

2nd Hospital Admission

Admitted 12/05/22, LOS 5 days

Disease Progression:

- Worsening of penile cellulitis with purulent drainage
- Skin lesions over the face, extremities have crusted
- Bleeding from the penile shaft
- Uncontrolled pain

3rd Hospital Admission

Admitted 12/15/22, LOS 13 days

Disease Progression:

- Excruciating pain, new lesions forming, and persistent fevers
- Lesions around penis have been slowly spreading and now encompass his entire penis circumferentially
- Small area of necrotic skin at the base of the penis
- New left wrist swelling

Treatments:

- 2nd round of TPOXX started for 28-day course
- Started HIV medications including Rezcobix and Truvada



4th Hospital Admission

Admitted 1/1/23, LOS 19 days

Disease Progression:

- New left facial swelling, worsening left arm swelling, and scrotal swelling concerning for recurrent cellulitis, and mpox lesions healing poorly
- Lesions covered most of their body including extremities, face, and genitals

Treatments:

- Left wrist arthrocentesis performed
 - Synovial fluid positive for mpox by PCR
 - Cultures negative for bacterial growth
- Two doses of Vaccinia Immune Globulin Intravenous (VIGIV) given
- Two doses of Brincidofovir given

Labs:

• CD4 count above 200

5th Hospital Admission

Admitted 3/10/23, LOS 5 days

Disease Progression:

- Recurrent Fevers
- No new lesions in over a month

Treatment:

• 3rd round of TPOXX for 28 days had been started prior to hospitalization

6th Hospital Admission

Admitted 3/22/23, LOS 3 days

Disease Progression:

- Fevers and altered mental status
- Concern for infection but could not perform lumbar puncture safely due to lesions over needle insertion site

Labs:

• CD4 decreased to approximately 100



Post Hospitalization

- Patient followed up outpatient with Infectious Disease clinic multiple times to check on lesions and follow patient for HIV
- Patient had multiple follow up visits with wound care
- Continued mpox testing on active lesions to determine when debridement of penis could be performed once negative
- By September 2023, all lesions had finally scarred
- CD4 count did drop below 200 in April, but did come above 200 in July and has stayed that way since



Discussion

- Positive mpox results for this patient from November 2022 July 2023 (166 days)
 - Most recent results from end of September 2023 were inconclusive
 - What do these positive results mean regarding infectious period?
- Positive mpox in Petersburg/Chesterfield/Prince George/Colonial Heights wastewater
 - Wastewater started testing positive in early October 2022
 - March 31, 2023 received CDC email about consistent detection of mpox over the last 4 weeks while no cases have been reported within that timeframe
 - Increased education on when to test for mpox with healthcare partners and increased mpox testing in our own health department clinics
 - These efforts yielded no new cases
 - Hypothesized that the identified chronic case may be the reason for positive wastewater
 - What do these positive samples mean for burden of community cases?



Improvements

- Better communication among local health departments, state health departments, and CDC
- Quicker initiation of TPOXX
- Research on factors attributed to chronic mpox
- Research on infectious period of mpox
- Better understanding of what mpox positive wastewater means