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Case Report: Monkeypox Diagnosed in the ED

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Introduction:

Rashes are one of the most common chief complaints we see as emergency medicine physicians on a day to day basis. Most of them tend to be self limited and require very little workup and can be discharged home, however; it is our job to try to identify rashes that may require isolation in order to prevent an out-break in our communities. Here we present a case of one such rash that has gained major media attention as of late, Monkeypox.

Case Presentation:

A male in his 20s who takes Descovy for HIV prophylaxis due to high-risk sexual behavior presented to the ED complaining of a painful rash that initially started on his right inguinal area but had gradually spread to his penis, bilateral hands, and his face. The rash started approximately 11 days prior the his visit to the ED. Of note, the patient did admit to having unprotected anal sex with his known partner 5 days prior to symptom onset. The patient had already been evaluated by his primary care doctor when the rash first started and completed a 5 day course of bactrim without any improvement. He followed up and was then prescribed levofloxacin, but given persistent symptoms he decided to come to the emergency department for further evaluation and treatment. Patient denied any other symptoms such as headache, chest pain, shortness of breath, abdominal pain, nausea, vomiting, or any other GI/GU symptoms.

Vitals were as follows: Blood pressure 142/75, Heart Rate 133, Respirations 18, Temperature 37.4 C, Pulse oximetry 99% on room air. Physical exam was positive for a large tender ulcerated lesion to the right groin (Fig. 1), multiple pustular lesions at varying healing states noted to his forehead (Fig. 3) and bilateral hands and a macular rash to his left trunk, leg, and buttock. Patients lab work was all within normal limits. Urinalysis including gonorrhea and chlamydia, were normal. CT abdomen and pelvis showed inguinal cellulitis without evidence of Fournier's gangrene. ECG showed sinus tachycardia at 113 beats per minute without any signs of ischemia.

In the ED patient was given 30cc/kg sepsis bolus, which improved his tachycardia, 15mg IV Toradol, and vancomycin and piperacillin-tazobactam was given. Patient was then admitted to the hospital and seen by infectious disease. Patient was continued on his Descovy and started on doxycycline while swabs for Monkeypox was sent out. His symptoms improved and was discharged home on doxycycline and topical mupirocin after his 4th day of hospitalization. Patient's swab did result positive for Monkeypox the following day after discharge and was instructed to home isolate until lesions healed. He has since had outpatient follow up with infectious disease and dermatology with almost complete resolution of his lesions.

Discussion:

Pathophysiology:

Monkeypox is a viral zoonotic infection caused by the orthopoxvirus, which is in the same genus as variola and vaccinia, that causes smallpox. Transmission of this virus has been seen in both animal-to-human and human-to-human. In regards to animal-to-human transmission, the virus can be transmitted via contact with an infected animal's bodily fluids, it has also been seen to be transmitted through ingestion of undercooked infected meat. Infected animals can range from the obvious monkey, to squirrels and mice. As for human-to-human transmission, there are four main ways to contract the disease. The first is direct contact with infectious lesions or bodily fluids, typically seen with sexual transmission. Second, indirect contact with materials or fomites that have been contaminated by bodily fluids. Third, transmission through respiratory droplets. Lastly, the virus does have the ability to cross the placenta from mother to fetus, thus vertical transmission is possible. [5,7]

Fig. 1

Fig. 2

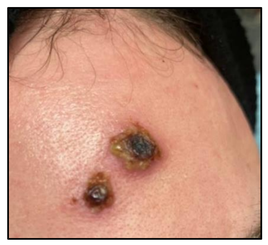

Fig. 3

Fig. 2

Discussion Continued:

Incidence:

Since its initial diagnosis in humans in 1970 in the Democratic Republic of the Congo, monkeypox has since spread primarily to other regions of Afica and four other countries, with America being one of them. Globally, ther is an annual incidence rate of 0.63 cases per 10,000 people. [2,7]

Clinical presentation:

Given the fact that this disease does have an incubation period of approximately 5-13 days patients can present with nonspecific viral symptoms such as fevers, myalgias, headaches, and fatigue prior to the characteristic rash seen in Monkeypox. These lesions will tend to be painful and or itchy and will progress through several healing stages. They begin as erupting papules/vesicles, which then transition to pseudo pustules, and eventually crusting over and falling off. These lesions tend to be at the site of initial contraction of the disease such as in the genitalia, anus, or oral areas due to sexual transmission. In addition to this, some patients have presented with clinical manifestations of proctitis, pharyngitis, and in rare occasions conjunctivitis.[2,3,4]

Diagnosis:

There are currently 3 diagnostic tests to verify Monkeypox diagnosis:[2,4]

1. Viral testing with PCR for Orthopox virus DNA is required for official diagnosis. Lesions should be swabbed vigorously to collect ample skin cells off the lesion. It is recommended to obtain at least 2 swabs from each lesion.
2. Serologic testing for Antiorthopox virus IgM and IgG antibodies
3. Electron microscopy evaluations showing brick-shaped pox virus virions

Discussion Continued :

Management:

The primary goal would be prevention of contracting Monkeypox by obtaining immunization against the disease. Currently there are two immunizations available to the public, both of which can be used as post exposure prophylaxis within 4 days of exposure for the highest efficacy, but can be given as late as 14 days post exposure. Immunizations are as follows:[6]

1. Jynneos (Available in the United States) with the following administration options
   a. Intradermal: 0.1mL per dose given as 2 doses separated by 4 weeks
   b. Subcutaneous: 0.5mL per dose given as 2 doses separated by 4 weeks
2. Imvamune (Available in Canada) with the following administration options
   a. Subcutaneous: 0.5mL per dose given as 2 doses separated by 4 weeks

For those that do contract the disease, antiviral therapy with Tecovirimat or Cidofovir/brincidofovir is an option; however, should be reserved only for those with severe symptoms, such as those with ocular involvement, or those that are severely immunocompromised. Duration of antiviral therapy varies depending on severity of symptoms and patient response, but typical treatment length is 14 days. For those that are relatively healthy, symptoms tend to be mild and self resolve after several weeks.[1,2,3,4]

Prognosis:

For most individuals who contract Monkeypox the disease itself is self-limited with symptoms lasting around 4 weeks. In the rare cases in which patients do require hospitalizations, it has been due to need for aggressive symptomatic relief. Mortality from this disease has only been seen in Africa, with a mortality rate around 10% in those that are immunocompromised with HIV. [2,4,5]

Conclusion:

Despite the severity of symptoms of Monkeypox, patients who contract the disease tends to return to full health with very minor symptom relief after several weeks. Patients who are at high risk of contracting the disease should consider prophylaxis immunizations to prevent contracting the disease in the first place.

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