Atypical Presentations of Adult Hand-Foot-Mouth Disease: A case series

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INTRODUCTION

Hand-Foot-Mouth disease (HFMD) is an acute viral illness commonly caused by members of the enterovirus family. The most common pathogens are Coxsackie virus A16 and Enterovirus E71, and transmission is usually via fecal-oral route. Following exposure, signs and symptoms are observed within three to seven days and include fever followed by a papulovesicular eruption on the palms and soles, as well as stomatitis of the oral mucosa and involvement of the buttock. This self-limited condition typically follows a benign course and is most commonly observed in children and infants in the spring and summer months. Here we describe 4 unusual, severe cases of hand-foot-mouth disease in adults, as well as treatment options and explore the emerging trend of adult CV-A6 HFMD.

CASE PRESENTATIONS

PATIENT A

A 37-year-old Hispanic male was evaluated in the clinic for a 4-day history of rash on the face and ears. Vital signs were unremarkable. Physical exam revealed small vesicles on bilateral auricular helices. An erythematous papulovesicular eruption was noted on the dorsal and palmar aspects of the hands as well as the plantar surface of feet bilaterally. Vesicles were observed on the elbows. Small crustated papules were noted on the cheeks and forehead bilaterally, as well. Observation of the oral mucosa revealed ulcers in the oropharynx. Preliminary laboratory studies including CBC and CMP were unremarkable. Enterovirus PCR of vesicular swab was positive.

PATIENT B

A 79-year-old Caucasian male was evaluated in the hospital for a 3-day history of pain in his right foot. Vital signs were unremarkable. Physical exam revealed scattered 5-20 mm erythematous, infiltrated papules and plaques over the soles of feet bilaterally with pustules on the right posterior heel. An unroofed bulla with denuded skin was noted over the right medial plantar surface with warmth and erythema. Erythematous, infiltrated papules were present on the left sole and dorsum of left fifth toe. No warmth was noted on exam of the left foot. Faded, pink macules 3-5 mm in size were noted on the palms bilaterally; no erythema or warmth was noted. Two 2-3 mm erythematous papules were present on the right earlobe. Preliminary laboratory studies were unremarkable. Extensive infectious work-up was conducted, including IgM titer for Rocky Mountain Spotted Fever (RMSF) which was found to be positive (1:256). PCR performed on tissue biopsy of one of the vesicles was found to be positive for enterovirus. This was considered to be the cause of the patient's acute illness.

PATIENT C

A 60-year-old Caucasian male was evaluated in the clinic for a 3-day history of a painful rash associated with sore throat and flu-like symptoms. Vital signs were unremarkable. Physical exam revealed erythematous tender papulovesicles on the face, palms, and soles. Gray “football-shaped” vesicles were present on the hands. Involvement of the oral mucosa was not observed. Laboratory studies revealed enterovirus from vesicle swab sample. Additionally, PCR study of tissue biopsy was found to be positive for enterovirus.

PATIENT D

A 48-year-old male was evaluated in the emergency department for a 3-day history of pain and swelling in his hands and feet. Vital signs were notable for temperature of 102.3°F Fahrenheit. Physical exam revealed edema of the hands and feet bilaterally, and large hemorrhagic bullae on the ulnar aspects of the hands and plantar surfaces of the feet. Discrete clear vesicles were noted on the dorsal aspect of the hands, forearms, and upper arms, as well as erythematous patches with crust and vesicles on the cheeks and lateral eyebrows. Involvement of the conjunctivae, nasal, and oropharyngeal mucosa was not observed. Preliminary laboratory studies were notable for pancytopenia with white blood cell count of 3.7x10^9/L, hemoglobin of 11.2g/dL, and platelet count of 303x10^9/L. Extensive infectious workup was conducted, and PCR of a vesicle swab sample was found to be positive for enterovirus. Early in his hospitalization, the patient was started on IV acyclovir given extensive involvement.

FIGURES

DISCUSSION

Hand-Foot-Mouth disease (HFMD) is a highly contagious febrile illness characterized by maculopapular or vesicular eruption of the palms and soles. Pharyngeal ulceration may be present, as well. It usually follows a benign course and spontaneous resolution usually occurs within 10 days. Children are predominantly affected in the spring and summer months. The most common causative agents are Coxsackie A16 and Enterovirus 71.

Hand-Foot-Mouth disease in adults is rare, and limited reports exist. Approximately 1% of exposed adults will manifest symptoms of infection. A worldwide rise in incidence of adult HFMD has recently been reported. This has been attributed to viral evolution and the increase in global travel over time. The increase has also been linked to the emergence of the highly virulent strain Coxsackie virus A6.

Coxsackie virus A6 (CV-A6) is most commonly seen in adults and causes a more severe, atypical disease. As seen in our cases, cutaneous involvement is diffuse and extends beyond the palms and soles. Widespread vesiculobullous lesions of the dorsal hands and feet, perioral region, scalp, torso, and extremities have been reported.

HFMD should be included in the differential diagnosis of adult diseases with widespread maculopapular or vesicular eruptions. Lesions can mimic secondary syphilis and rickettsial infections.

The main treatment of this self-limited illness is supportive care. Antiviral agents including Acyclovir and Pleconaril have been suggested for severe disease, but efficacy remains controversial.

The active form of acyclovir is produced following phosphorylation by viral thymidine kinase. Because enteroviruses responsible for HFMD lack thymidine kinase, acyclovir theoretically should not prove effective. It has been suggested the therapeutic effects are likely due to acyclovir’s ability to enhance the body’s natural interferon.

Patient D likely represents the third report of acyclovir efficacy in the treatment of HFMD. Remarkably, he showed complete resolution by Day 7 of IV acyclovir.

Pleconaril inhibits the production of virus by inhibiting viral attachment to the host cell surface receptor. Several clinical trials have demonstrated broad anti-picornaviral activity, and it has been implicated in the treatment of HFMD.

CONCLUSIONS

This case series describes severe, unusual presentations of Hand-Foot-Mouth disease in adults. Our patients presented during the summer and winter months with widespread cutaneous distribution. Lesions ranged from small macules to maculopapular and vesicular lesions. HFMD in adults is likely due to infection with the highly virulent pathogens, CV-A6.

Penicillin may mimic either infection, or autoimmune etiologies, including RMSF.

Providers should be aware of the emerging increase of Hand-Foot-Mouth disease in the adult population.

REFERENCES