CASE REPORT

Hand, Foot and Mouth Disease and Care: A Short Case Report

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ABSTRACT

Hand, foot, and mouth disease (HFMD) is an acute viral infection occurring mostly in infants and children. Enterovirus 71 (EV71) infection mostly occurs in children < 5 years of age. Severe cases, however, are usually encountered in children under the age of 3 years, and exceedingly rare in teenagers > 14 years and adults. In this report, we present the case of an 11-year-old boy presenting with a hand, foot and mouth disease typical of HFMD.

Keywords: Care, child, hand-foot-mouth disease, viral eruption

INTRODUCTION

Hand, foot and mouth disease (HFMD) is an enteroviral infection occurring in early childhood. It is clinically characterized by erosive stomatitis that occurs with a vesicular and maculopapular rash which is frequently observed in the hands and feet (1). The major etiological agents of HFMD are human enterovirus A (HEVA), most commonly, Enterovirus 71 (EV71) and Coxsackievirus A16 (CVA16), although several other viruses such as EV-D68 and CVA6 have also been implicated (2). EV71 has been associated with severe and sometimes fatal neurological complications such as aseptic meningitis, acute flaccid paralysis, encephalitis and neurogenic pulmonary edema (3).

CASE REPORT

An 11-year-old girl presented with a 5-day history of mild fever and malaise and a 3-day history of a vesicular rash involving his hands and feet. The patient experienced a severe itching over the papules.

Informed consent was obtained from the parent as a part of the routine protocol before the clinical examination. On examination, the patient was febrile and had a body temperature of 38.6°C. Many papules were noted on the palm (Fig. 1) and foot (Fig. 2). Intra-oral examination revealed multiple reddish macules, measuring approximately 2 mm in diameter in the roof of the hard palate. No other lesions were present intra-orally.

This clinical picture is highly characteristic of hand, foot and mouth disease (HFMD). The patient was treated supportively at home. The patient was advised to consume plenty of fluids and was prescribed paracetamol syrup to control fever, topical local anaesthetic for intra-oral application, antihistamine syrup to reduce itching and calamine lotion for topical application. Family was informed about the care of child at home. At follow-up 1 week later, her systemic symptoms had improved and the skin lesions were resolving. The patient was followed-up for 1 month and no recurrence was noted.

DISCUSSION

Hand, foot and mouth disease is one of the more distinctive rash syndromes caused by enteroviruses. It is most frequently caused by coxsackievirus A16, but can also be caused by enterovirus 71; coxsackie A viruses 5, 7, 9 and 10, and coxsackie B viruses 2 and 5. Hand, foot and mouth disease was first reported in New Zealand in 1957. Coxsackievirus A16 was first identified in 1958 in Canada. Large outbreaks of HFMD were first reported in Malaysia and Taiwan between 1997 and 1998 (4, 5), and regular epidemics have been reported in countries across the Asia-Pacific region, in particular in China (6). Over the last 5 years, coxsackievirus A6 has been identified as a causative agent in outbreaks in Europe, Southeast Asia and America (3). There is a dramatic increase in the frequency of HFMD at Dermatovenerology Department

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Fig. 1: Maculopapular rashes are shown for patient's palm infected with HFMD.

Fig. 2: Maculopapular rash are shown for patient's foot infected with HFMD.

of İstanbul Medical Faculty in June 2013 compared to previous years (7).

Hand, foot and mouth disease most commonly affects children under 10 years of age. Older children and adults are sometimes affected. Adults and older children with HFMD tend to develop a milder form of the illness compared with younger children. Commonly occurring in childhood HFMD comes in cycles of 3 to 4 years. The prodromal phase, including low-grade fever, malaise and sore throat, is commonly observed. Starting with mild fever disease is characterized by sudden eruptions of papulovesicular rash. The oropharynx is inflamed and contains scattered vesicles on the tongue, buccal mucosa, posterior pharynx, palate, gingiva and/or lips. These may ulcerate, leaving 4–8 mm shallow lesions with surrounding erythema. Maculopapuler, vesiculer and/or pustular lesions may also ocur on the hands and fingers, feet, and buttocks and groin; hands are more commonly involved than the feet. Lesions on the hands and feet are usually tender and vesicular and vary in size from 3 to 7 mm; they are generally more common on the dorsal surfaces but frequently occur on the palms and soles as well. Vesicles resolve in about 1 week. Buttock lesions do not usually progress to vesiculation. Disseminated vesicular rashes may complicate pre-existing eczema. The disease usually improves spontaneously after 7–10 days without any complication. In severe disease, cardiorespiratory and neurological involvement may develop (1).

Children with HFMD were considered to have more serious illness if they have the following features: persistent high-grade fever associated with toxic and ill-in appearance, recurrent vomiting (at least twice), tachycardia (heartrate 150/min) breathlessness, poor perfusion (cold clammy skin), reduced consciousness (irritability, lethargy, drowsiness and coma), limb weakness, meningism, and seizures (8).

The diagnosis of HFMD is usually based on the clinical features. Viral culture using a combination of cell lines that support the growth of enteroviruses is the gold standard method for confirmation of infection. Although this shares some clinical resemblance with other diseases like varicella zoster, papular urticaria, impetigo and pompholyx, the constellation of features are unique enough to aid instant clinical diagnosis with certainty in almost all cases. Hand, foot and mouth disease is a generally self-limiting illness, and there are no specific drug treatments. However, symptomatic treatment often is required. Antipyretics are given to control fever and antihistamines to reduce itching. Topical local anaesthetics can be prescribed for oral ulcers to improve patients'

ability to consume a routine diet (9). Commonly used drugs include antiviral agents, antibiotics and immunopotentiators, although there are few studies showing a clear improvement in outcome (10).

Vaccines for enteroviruses (other than poliovirus) are not available. The disease mainly spreads by contact with nose and throat discharges, saliva, fluid from vesicles or patients' stool, or through contaminated objects. Significant risk factors for infection are low socio-economic status and personal hygiene habits such as residence in rural areas, being member of a migrant population, not washing hands before eating, toy sucking and low family income. Strict implementation of basic protocols like monitoring cleanliness of the hands, utensils and drinking water and avoiding direct contact with affected people can be rewarding. Restriction of the affected children from attending school or other outdoor activities is a very simple but effective strategy (11).

Family should be informed about the care of child at home. The suggested care methods are as follows.

- To provide resting of child.
- To check and keep bady temperature in normal range.
- To increase oral liquide intake. Do not give citrus or corbonated drinks such as orange or lemonade and soda. These liquids may cause child's mouth to hurt more.
- To feed with mild nutrients till mouth lesions remedy. Milk-based drinks or cold foods or room temperature drinks are often less painful to the child to swallow.
- Washing your hands gently with soap and then rinsing with water. Then patting the shin dry to avoid breaking the blister and spreading the infection.

Children are particularly infectious until the blisters have disappeared. Therefore, the importance of not allowing child visitors to the home until the lesions healed was explained to the family (12).

Hand, foot and mouth disease is a common acute viral illness with fever, oral ulcers and vesicular rashes on the hands, feet and buttock as characteristics features. Hand, foot and mouth disease is usually a self-limited and benign condition; however, fatal cardiopulmonary and neurological complications may be occasionally observed cases with enterovirus 71 infection. All paediatricians, dermatologists and nurses should be aware of the clinical features of this disease and possible complications.

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