

Case Report

Hand-Foot and Mouth disease: A Report of an Outbreak in Kolkata

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Abstract

Observations: Hand foot and mouth disease (HFMD) is a self limiting condition caused by members of the non-polio Enterovirus genus and is characterized by acute vesicular eruption of palms and soles with a painful erosive stomatitis. It is usually associated with low grade fever and usually has an uncomplicated course with complete resolution in 7-10 days. Identification of this self limiting condition helps in avoiding unnecessary investigations and treatment.

Introduction

Hand foot and mouth disease (HFMD) is a self limiting condition caused by members of the non-polio *Enterovirus* genus and is characterized by acute vesicular eruption of palms and soles with a painful erosive stomatitis. It is usually associated with low grade fever and usually has an uncomplicated course with complete resolution in 7-10 days [1]. We here report an outbreak of HFMD in the month of August 2009 with a total of 5 cases presenting to Dermatology OPD of a tertiary care centre in Kolkata.

Case Reports

Case 1: A 6 years old girl was brought to us by her parents in the month of August 2009 with sudden appearance of vesicular lesions for 3 days. She had developed fever and malaise 5 days back. Fever was of low grade, continuous and not associated with sore throat, cough, diarrhea, abdominal pain, headache, and vomiting. 3 days back she developed multiple vesicles in mouth. They were present on the lips, tongue and palate. They soon ruptured leaving superficial painful ulcers. The next day she

developed multiple asymptomatic papules and vesicles over body, mainly over the extremities and buttocks. Lesions were papules to start with but soon turned into vesicles. More vesicular lesions developed in crops over next two days. On examination baby was afebrile. Multiple discrete vesicles on an erythematous base along with skin colored papules were present bilaterally over hands, elbows, knees and feet, including palm and soles (Figures 1, 2).



Figure 1. Multiple vesicles with surrounding red halo seen bilaterally over palms



Figure 2. Multiple vesicles bilaterally over soles

In addition few vesicles were present over the buttocks close to midline. Lesions were variable in size 0.5 cm to 1 cm and were containing clear fluid. The shape of larger lesions was strikingly oval. Few vesicles have ruptured to leave an erythematous superficial ulcer. Oral mucosa was involved in the form of multiple superficial painful ulcers over lip, tongue and palate. No other mucosal site was involved. The systemic examination was non contributory.

Chicken pox, HFMD, Herpes simplex and aphthous ulcer were considered as differential diagnosis. Chicken pox is characterized by polymorphic lesions. As the lesions were mostly vesicles with few papules so chicken pox was unlikely. Presence of skin lesions was not consistent with diagnosis of aphthous ulcer. The prodrome of low grade fever, characteristic distribution of lesions over hands, feet, and mouth along with knees, elbows and buttocks and oval shape of vesicles are very much in favour of HFMD. Based on these findings, clinical diagnosis of HFMD was made. Parents were assured and no treatment was given. Parents were asked to bring baby for follow up after 7 days. On follow up all the lesions have healed without any sequale.

Case 2: A 3 years old male child was brought with complaints of sudden development of vesicles in mouth and over body for last 1 day. On enquiry it was learnt that child had fever for last 3 days. The focus of infection could not be ascertained. He developed multiple vesicles in mouth and over skin. On examination baby was afebrile. Multiple small papules and vesicles were seen bilaterally over hands, knees, feet and buttocks and in mouth (lower lip)(**Figure 3**).



Figure 3. Two superficial erosions with red halo over inner side of lower lip resembling aphthous ulcers

Few vesicles were bigger and oval in shape. Based on the characteristic site of involvement and nature of lesions, clinical diagnosis of HFMD was made. Parents were assured and asked to come for follow up after 7 days. On follow up lesions were completely healed without any sequale.

Case 3: An 8 years old male presented with multiples vesicles over body and in mouth for last 5 days. He had low grade fever with malaise 7 days back. Then he developed multiple vesicles in mouth and over body. Similar lesions appeared in crops over next 2 days. On examination lesions were found bilaterally over distal extremities,



Figure 4. Multiple vesicles over buttocks

mostly localized over hands, elbows, knees and feet. In addition lesions were found on buttocks also (**Figure 4**).

Few lesions were larger (1cm) and oval. Few lesions were infected. Oral lesions were mimicking aphthous ulcers and were present over lips and tongue. Clinical diagnosis of HFMD was made and child was prescribed Erythromycin for 7 days for secondary bacterial infections. On follow up lesions have completely healed.

Case 4: A 7 months old female was brought with multiples vesicles over distal extremities for 2 days. On examination she was having low grade fever and mild dehydration. Multiple vesicles were found over distal extremities in a distribution described in previous cases. Palm and soles too had vesicles. Many of the vesicles were oval. On examination of mouth 3 superficial ulcers were found- 2 on the dorsum and 1 on the undersurface of tongue. 1 intact vesicle was seen on the inner side of lower lip. Erythema toxicum neonatorum (ETN) was considered in differential diagnosis. But age (7 months), absence of follicular lesions and pustules and involvement of palms and soles were against the diagnosis of ETN. Diagnosis of AHEI ? was made on the basis of characteristic clinical findings. Baby was given paracetamol drops for fever and her dehydration was corrected. On follow up after 7 days, most of the lesions have healed. Few lesions were still present over buttocks. However no new lesions were developing. On the second follow up after 2 weeks lesions have completely healed.

Case 5: A 5 years old male presented with multiple papules and vesicles over distal extremities and in mouth for last 3 days. The lesions were appearing in crops. On examination multiple papules and vesicles were found in a distribution described in previous cases. Oral ulcers were mimicking aphthous ulcer and were painful. Parents were assured and asked for follow up. On follow up after 7 days, lesions were completely healed.

Discussion

HFMD is a viral illness characterized by acute appearance of papules and vesicles over distal extremities and mouth. The most common etiological agent is *Coxsackievirus* A16 or *Enterovirus* 71. In addition, sporadic cases with *Coxsackievirus* types A4-A7, A9, A10, B1-B3, and B5 have been reported. Most of the cases are sporadic, however epidemics occur regularly [1].

HFMD is reported to be having worldwide distribution. Many cases are known to occur in late summer and early fall in temperate climates but throughout the year in tropical countries [1]. Most of the cases are children below 10 yrs of age and there is no report of sex predilection in most of the reports. However certain reports have documented slight male predominance (male to female ratio being 1.2-1.3:1) [2].

Infection is acquired by fecal-oral route or direct contact with oral and skin lesions. Following entry virus multiplies in regional lymph nodes and cause viremia. After that they reach target site and induce reticular degeneration and local inflammation. This results in vesicle formation. Soon, usually in 7 days, neutralizing antibodies appear and limits the progression of disease [3].

After an incubation period of 3-6 days, prodromal symptoms (duration 12-36 hrs) are seen. Low grade fever (duration 2-3 days), malaise, anorexia and mouth soreness are commonly findings. Clinical feature is dominated by papules and vesicles involving oral mucosa and skin (two-thirds of cases). Usually oral lesions appear first as red macule soon progressing to vesicle [3]. These vesicles rupture easily and leave painful superficial ulcers. Skin lesions are mostly limited to distal extremities (dorsum of the hands and feet as well as palms and soles) and mouth, giving the disease its name. In addition elbows, knees and buttock are involved. Another characteristic feature is oval or elliptical vesicles surrounded by red halo [1] (**Figure 5**).

Diagnosis is based upon clinical findings. Characteristic shape of lesions and site of involvement are of paramount help. The etiological diagnosis is made by isolation of virus from vesicle fluid and stool.

The disease is self limited [1]. Lesions heal completely in 3-7 days without any sequale i.e. scarring or pigmentary changes [2]. Co-



Figure 5. Characteristic vesicles of HFMD. Oval vesicles with red halo (marked with circles)

unseling and assurance and symptomatic treatment are required in most of the cases.

The most common complication is dehydration [2]. It results from inadequate intake of fluids because of painful ulcers. So monitoring of fluid intake and output is useful. Neurological complications like polio-like syndrome, aseptic meningitis, *Guillian-Barre* syndrome, encephalitis, benign intracranial hypertension etc are also known. These may be fatal at times. These complications are particularly associated with *Enterovirus 71* infection- this highlights the importance of etiological diagnosis. Such patients require hospitalization and intensive supportive management. Vomiting, leukocytosis, and an absence of mouth ulcers [4] and fever of more than 3 days, temperature rise more

than 38.5° C and history of lethargy [5] are risk factors for serious complications in *Enterovirus 71* infections. So in absence of facilities for virus isolation, these clinical findings can be of prognostic significance. Rarely, cardiopulmonary complications such as myocarditis and pulmonary edema may occur [3]. Recurrences, though rare, have been reported [6].

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