EDUCATIONAL ARTICLE

Hand, Foot And Mouth Disease

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Hand, Foot and Mouth Disease (HFMD) is a viral illness occurring mainly in infants and children. Occasionally, young adults and adults may develop the disease. The causative virus is usually Coxsackie virus A16 from the genus Enterovirus, family Picornaviridae. Enterovirus 71 along with other coxsackie virus types A4-A7, A9, A10, B1-B3, and B5 are responsible for some sporadic cases. (1)

Epidemiology

Mode of transmission - The disease is contagious, transmission occurs by the following routes:

- Direct contact with nasal and/or oral secretions,
- Fecal-oral
- Aerosolized droplets in a fecal-oral or oral-oral route

During epidemics, transmission from mother to fetus also occurs.

Incubation period - 3-7 days

Age - It is common in children, especially infants and children under 5 years of age. The severity of disease as well as complications are more in this age group.

Sex - Males and females are equally affected

Geographical distribution - It occurs worldwide. HFMD shows a seasonal variance only in temperate countries, with cases spiking in summer. However, in tropical countries like India, there is no seasonal pattern.

The disease occurs both sporadically as well as in the form of epidemics.

Recent outbreaks

Southeast Asia has seen the maximum number of cases in the recent past. Taiwan (1998) and Singapore (2000) recorded epidemics of HFMD. Recently, an increase in the number of HFMD cases has been reported from Indian cities like Mumbai (2) and Vadodara (3).

Risk factors

Contact with HFMD, large family number, and rural residence are risk factors in the setting of an epidemic.

Pathogenesis

The virus particles are implanted initially in the buccal and ileal mucosa. From here, they spread into the blood stream via the regional lymph nodes. Within 72 hours, viremia is established and the virus reaches the skin and oral mucosa causing the characteristic lesions. (4)

Clinical features

Symptoms

Initially, the presentation is with constitutional symptoms like fever, malaise, body ache, anorexia and sore throat. This is followed by the development of the oral and skin lesions. Patients present with very small blisters on hands, feet, and diaper area. The rash may be painful if pressed.

Signs

Oral lesions: These are seen on the labial and buccal mucosal surfaces. Other sites -Tongue, gums, uvula, anterior tonsillar pillars, palate.

Nature of lesions: Yellow ulcers surrounded by red halos.

Skin lesions: These are typically seen on the dorsal aspects of the hands and feet as well as the diaper area. They may appear on the ventral and inter-digital surfaces as well. The rash may be asymptomatic or pruritic. Initially, erythematous macules that rapidly progress to thick-walled grey vesicles with an erythematous base. (5) The rash resolves by itself within 3-6 days.

Differential diagnosis

Herpangina, Herpetic gingivostomatitis, Aphthous stomatitis, Stevens-Johnson's syndrome are some of the conditions which need to be differentiated from HMFD.

Investigations

Typically, a clinical evaluation is sufficient to diagnose HFMD. Lab tests which may prove useful are:

- **Virus isolation -** Swabs taken from the vesicles, ulcers or stool can be utilized for isolating the virus. It can then be cultured on viral tissue media or inoculated into mice to obtain a larger sample for demonstration
- **Serologic tests:**
- Acute phase : Neutralizing antibodies can be d tected
- Convalescent phase - For retrospective diagnosis, complement-fixing antibodies can be detected
- **PCR** can be used to distinguish between coxsackie virus A16 and enterovirus 71(6). It has prognostic significance. The usefulness of this technique lies in the fact that epidemics caused by enterovirus 71 tend to be more severe and are associated with more complications and fatalities.

Management

The main aim of treatment in HFMD is to reduce the severity and duration of symptoms. As such, there is no curative therapy. Hence, care is purely supportive. Topical antihistamines like diphenhydramine are useful to treat pruritis. NSAIDs (Ibuprofen, paracetamol) may be used for pain relief and control of fever. Aspirin is NOT to be used in children under 12 years of age as it carries the risk of precipitating Reye's syndrome. Antipyretics are given as and when required. Fluids should be given to maintain hydration. Since the oral ulcers are very pain sensitive, the child may refuse feeds. Juices and carbonated beverages are not recommended as they contain a significant acid content which causes pain. Hence, cold milk preparations like ice cream are ideal feeds.

Complications

- The main complication that can occur is a secondary skin infection

• Rarely, cardiopulmonary and CNS complications like cardiopulmonary failure, aseptic meningitis, etc. may occur. These are associated with outbreaks caused by Enterovirus 71.

Prognosis:

Complete recovery is the norm in HFMD

References

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CASE REPORT

An Adolescent With An Axillary Mass

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Abstract

A 13-year-old boy presented with a progressively enlarging right anterior axillary and chest wall mass. He first noted the mass three days after injuring his right shoulder while playing football. When the mass persisted, the possibility of hemorrhage into a soft tissue sarcoma in an adolescent was raised. Computed tomography and magnetic resonance imaging were used to evaluate the mass. Imaging revealed a multi-loculated cystic mass with an internal fluid-fluid level, and enhancement characteristics consistent with cystic lymphangioma and recent traumatic hemorrhage. This diagnosis was confirmed after histologic examination of the resected mass. This case illustrates an atypical adolescent presentation of cystic lymphangioma, manifest after trauma and masquerading as a soft tissue tumor. High resolution diagnostic imaging provided an accurate diagnosis and guided resection.

Introduction

Cystic lymphangiomas, once referred to as cystic hygromas, are congenital lymphatic malformations constituting 6% of all benign lesions of infancy and childhood. (1) Their origin is not completely understood, but it is thought that they occur if the primary lymphatic sacs fail to join the central venous system during embryologic development. (2) The sequestrations of lymphatic tissue form cysts that are composed of dilated endothelium lined channels. Most masses are identified by two years of age with approximately 50% noted at birth. (3) Approximately 75-90% are found in the head and neck, a region with a complex lymphatic system, with lesions also occurring in the axilla, mediastinum, chest wall, abdomen, inguinal region, and extremities.(3) Rapid or intermittent enlargement can occur secondary to infection or, as in the case presented here, injury related hemorrhage.

Case Report

A 13-year-old boy with no significant past medical history presented with a progressively enlarging right axillary mass extending to the right chest wall. He had been playing football and fell onto his right shoulder. Three days later he noted the presence of a small pea-sized mass. Within five days the mass had increased in size to approximately 5 x 9cm. He reported having intermittent numbness and slight weakness in the right hand with use.

On initial physical exam, the patient was noted to have a soft, mobile, anterior axillary mass that was approximately 6 x 10cm and was nontender to palpation. His upper extremity strength was equal bilaterally and his sensation was intact. Bilateral radial pulses were normal.

The mass was evaluated with computed tomography (CT) revealing a 9.6 (craniocaudad) x 4.4 (transverse) x 5.7 (anterior-posterior) cm multiloculated cystic mass within the upper right lateral chest wall and axilla, with very faint peripheral and septal enhancement most consistent with a large lymphatic malformation or cystic hygroma. (Figure 1a). The adjacent ribs, muscles, neurovascular structures and pleura were normal in appearance. Axial magnetic resonance imaging (MRI) revealed a multiloculated, multiseptated cystic mass with a distinct fluid-fluid level indicative of recent bleeding into the cyst. (Figure 1b). On post-gadolinium images, the mass demonstrated peripheral rim enhancement as well as enhancement of internal septations. (Figure 2). The MRI assisted in identifying the relationship of the mass to the subclavian vein and long thoracic and thoracodorsal nerves. A diagnosis of cystic lymphangioma was made based on imaging. Due to parents' and referring providers' concerns for a hidden malignancy and risk of future infection, elective resection after resolution of acute swelling was recommended.