Papular-Purpuric “Gloves and Socks” Syndrome

The following summary of information from the Dermatology Online Journal, the article included below this summary, and a case report published in 2001, may serve as a guideline for any questions from the public regarding Papular-Purpuric “Gloves and Socks Syndrome”.

**Signs and Symptoms:**

The syndrome produces a distinctive redness and swelling of the hands and feet that is the same on both hands and feet. Typically, there is a clear line of distinction between the rash and non-rash areas at the wrists and ankles. The rash may be occasionally painful or itchy. The rash may be followed by muscle and joint pain. Fever occurs frequently.

**Length of Illness:**

The illness usually resolves in 1-2 weeks in otherwise healthy individuals.

**Incubation Period:**

The incubation period is about 10 days.

**Cause:**

A link to parvovirus B19 is widely accepted, however other viruses have been implicated based on serologic evidence including cytomegalovirus, coxsackievirus, measles virus, and human herpesviruses 6 and 7.

**Transmission:**

Transmission of the virus occurs through the respiratory route in most cases. The virus is shed in nasal and oral secretions while the virus is present in the blood, so patients may transmit the virus before development of the rash. **It is critical to note the following: Patients are considered infectious when the rash is present. This is an important distinction between “Gloves and Socks Syndrome” and “Fifth Disease”. Individuals diagnosed with “Gloves and Socks Syndrome” should not attend school for the duration of the illness.**

**Important Considerations:**

An important aspect of treatment is identifying any prior or ongoing exposure to susceptible populations such as pregnant women, patients with hematologic disease, and immunosuppressed patients. These patients should contact their personal physicians immediately or as soon as possible after the exposure.

Article by Dr. Katta at Baylor College of Medicine
Published in Dermatology Clinics, April 2002

The following information was shared with TDH Region 9/10 and the Ector County Health Department by Dr. Walker at TDH Austin last Friday, May 2, 2004, after a case of “gloves and socks” syndrome was reported in a 1st grader in the ECISD.

**Overview**

- Papular purpuric “gloves-and-socks” syndrome is a distinctive symmetric erythema and edema of the hands and feet, with gradual progression to petechiae and purpura that was described only in the past decade. One of the clinical hallmarks of the rash is the sharp demarcation on
the wrists and ankles, leading to the name “gloves-and-socks” syndrome. Mucosal involvement is a common finding, and involvement of other areas of the body has been reported, including the cheeks, thighs, elbows, knees, and buttocks. The exanthem typically is painful, and may be associated with fever and arthralgias. Associations with other dermatologic diseases, such as erythema multiforme and erythema nodosum, also have been described. A role in the pathogenesis of various collagen vascular disorders has been suggested and is under investigation. The diagnosis of infection rests on the typical clinical findings.

- The syndrome typically occurs in young adults, but it has been reported in children. A seasonal incidence is noted, with most cases occurring in the spring and summer.

- A link to parvovirus B19 is widely accepted, however other viruses have been implicated based on serologic evidence, including cytomegalovirus, coxsackievirus, measles virus, and human herpesviruses 6 and 7.

- Transmission of the virus occurs through the respiratory route in most cases. The virus is shed in nasal and oral secretions during periods of viremia, so patients may transmit the virus before development of the rash. Unlike patients with erythema infectiosum, patients are considered infectious when the rash is present.

- A number of case reports and case series have described vascular effects in association with B19 infection. The clinical manifestations have ranged from vasospasm to leukocytoclastic vasculitis to specific vasculitic syndromes. Multiple cases of Henoch-Schonlein purpura have occurred in conjunction with acute infection in children and adults. Bilateral digital arterial occlusive disease and Raynaud's phenomenon have also been reported.

- Parvovirus B19 may lead to either acute or chronic rheumatologic symptoms. The clinical pattern of these symptoms has been noted by many clinicians to bear several striking similarities to specific rheumatologic diseases such as systemic lupus erythematosus and rheumatoid arthritis.

- Although acute infections in the healthy immunocompetent individual typically resolve in 1 to 2 weeks without complications or permanent sequelae, whenever parvovirus B19 infection is diagnosed, the physician must ensure that neither the patient nor his or her contacts is a member of certain vulnerable populations. In these populations, infection with parvovirus B19 may result in devastating complications. The vulnerable populations include those with hematologic disease, immunosuppressed patients, and pregnant women. Counseling of these patients against ongoing exposures to at-risk populations, is mandatory.

**At-risk Populations**

- In certain populations, infection with parvovirus B19 may lead to devastating complications. These populations include patients with hematologic disease, immunosuppressed patients, and pregnant women. In patients with chronic hemolytic anemia, parvovirus B19 is the most common cause of transient aplastic crisis. Patients with sickle cell anemia, thalassemia, autoimmune hemolytic anemia, and other conditions involving red blood cell destruction are susceptible.

- Patients who are immunocompromised represent another population prone to complications from B19 infection. In this population, chronic anemia may be seen. In patients who are immunocompromised because of HIV infections, transplantation, or congenital immunodeficiencies, chronic B19 infection may occur.

- The other main population at risk of serious complications caused by B19 infection is pregnant women. In this case, devastating teratogenic effects may result. Possible adverse fetal outcomes range from hydrops fetalis to congenital anemia to death.
Important Considerations

- One aspect of treatment should never be overlooked. **Even in the healthy patient, an important aspect of care is identifying any prior or ongoing exposure to susceptible populations.** These populations, as mentioned previously, include pregnant women, immunosuppressed persons, or those with any type of chronic hemolytic anemia. If a member of these groups has been exposed, notification of the patient and subsequent observation by his or her treating physician are necessary. Care must be coordinated with a specialist (ie, infectious disease, obstetrics, hematology). In these patients, devastating systemic effects may occur, and early monitoring for complications is crucial.

- The diagnosis of parvovirus B19 in any individual, child or adult, necessitates inquiries as to all possible exposures to pregnant women. Although the risk of fetal infection and subsequent adverse outcomes is not high, when infection occurs it can be devastating. In the patient who presents with parvovirus infection, this aspect of counseling is crucial. Unfortunately, by the time a patient presents with the rash, the damage may have been done already. Because the virus is transmitted before the rash appears, any exposures in the household, at the workplace, or at school or daycare centers must be reviewed carefully.

- If a pregnant woman has been exposed to an infected individual, serologic testing for IgG and IgM should be performed. Infected women should be monitored closely by their obstetricians with examinations and serial ultrasounds.