

## LETTER TO THE EDITOR

### ANALOGIES IN MEDICINE: SLAPPED CHEEK APPEARANCE

Belo Horizonte, April 2014

Dear Sir

The first known clinical picture of a patient with **erythema infectiosum** was drawn in Robert Willan's book *On Cutaneous Diseases* of 1808. The disease was thought to be a mild form of rubella or measles. Anton Tschamer described a distinct illness compatible with erythema infectiosum in 1889, although he thought it was abortive rubella. It was designated as *fifth disease* in the early 1900s when infectious exanthems were numbered first through to sixth. The first clue to the etiologic agent came in 1975, in England. During routine screening of serum from healthy blood donors for hepatitis B surface antigen, nine samples of blood had false-positive results by counter-immunoelectrophoresis (CIE) but were negative by more sensitive techniques of hemagglutination and radioimmunoassay (RIA). Electron microscopy of these serum samples demonstrated viral particles that were designated as B19 after a specimen label from one of the blood donors. The authors postulated that this was an infectious agent because 30% of adults had the IgG antibody to the viral agent. It was later confirmed that B19 was a parvovirus<sup>2</sup>.

Erythema infectiosum or fifth disease is one of several possible manifestations of infection by erythrovirus, previously called parvovirus B19.

It starts with symptoms like a low-grade fever, headache, and flu symptoms, such as a runny or stuffy nose. These symptoms pass, and then a few days later a rash appears. The bright red rash most commonly appears in the face. Cheeks are a defining symptom of the infection in children, hence the name "slapped cheek disease"<sup>3</sup> (Port. Aspecto de bochecha esbofetada ou "tapa na cara") (Fig.1). Occasionally the rash will extend over the bridge of the nose or around the mouth. In addition to red cheeks, children often develop a red, lacy rash on the rest of the body, with the upper arms, torso, and legs being the most common locations. The rash typically lasts a couple of days and may itch; some cases have been known to last for several weeks. Patients are usually no longer infectious once the rash appears.

Teenagers and adults may present a self-limited arthritis. It manifests itself as painful swelling of the joints that are similar to arthritis. Older children and adults with fifth disease may have difficulty in walking and in bending joints such as wrists, knees, ankles, fingers, and shoulders.

The disease is usually mild, but in certain risk groups it can have serious consequences:

In pregnant women, infection in the first quarter has been linked

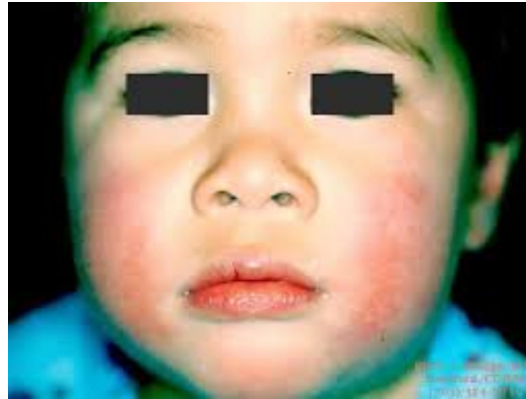


Fig.1 - Child with the characteristic "slapped cheeks"

to hydrops fetalis, causing spontaneous miscarriage.

In people with sickle-cell disease or other forms of chronic hemolytic anemia such as hereditary spherocytosis, infection can precipitate an aplastic crisis.

It should also be noted that those who are immuno-compromised (HIV/AIDS, Chemotherapy) may be at risk to complications if exposed.

Erythema infectiosum is transmitted primarily by respiratory secretions (saliva, mucus, etc.) but can also spread through contact with infected blood. The incubation period (the time between the initial infection and the onset of symptoms) is usually between four and 21 days. Individuals with fifth disease are most infectious before the onset of symptoms. Typically, school children, day-care workers, teachers and mothers are most likely to be exposed to the virus. When symptoms are evident, there is little risk of transmission; therefore, symptomatic individuals need not be isolated.

Any age may be affected although it is most common in children aged five to fifteen years. By the time adulthood is reached about half the population will have become immune following infection at some time in their past.

Outbreaks can arise especially in nursery schools, preschools, and elementary schools<sup>1,3</sup>.

The name "fifth disease" derives from its historical classification as the fifth of the classical childhood skin rashes or exanthems. The classification is as follows: 1- Measles, 2- Scarlet fever, 3- Rubella, 4- Dukes' disease ("childhood exanthem"), 5- Fifth disease (erythema infectiosum), 6- Roseola.

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