



## CASE REPORT

## Learning from Mistakes – a Case of Pediatric Patient with Recurrent Whitlow

Vessela V. Raykova

Department of Medical Microbiology, Medical University of Sofia, Sofia, Bulgaria

**Correspondence:**

Vessela V. Ouzounova-Raykova,  
Department of Medical Microbiology,  
Medical University of Sofia, 2  
Zdrave St., 1431, Sofia, Bulgaria  
E-mail: pumpi@abv.bg  
Tel: +359 2 9172580

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**Background:** Herpetic whitlow is a herpes simplex virus infection of the fingers or thumb characterized by erythema accompanied by painful non-purulent vesicles.

**Aim:** To draw attention to the typical appearance of herpetic whitlow and to distinguish it from bacterial infections and other skin diseases because of their different management.

**Materials and methods:** The patient's history, dermatological status, and scrapings from the vesicles were taken. The swabs were cultured for isolation of bacteria and fungi. DNA extraction and PCR were performed for detection of HSV.

**Results:** Repeated identical infections of the finger were found in the patients' history, commonly associated with respiratory infections. The cultured swabs for bacterial or fungal detection remained negative. The scraping from vesicle used for viral detection showed positive HSV result.

**Conclusion:** It is important to distinguish herpetic whitlow from infectious and skin diseases and to learn from yet done mistakes - the patient was previously diagnosed with bacterial whitlow, contact dermatitis and dermatitis of unknown origin.

## INTRODUCTION

Herpes simplex viruses (HSV-1 and HSV-2) are ubiquitous human pathogens. The herpetic whitlow is a herpes simplex virus (HSV) type 1 or 2 infection of the fingers or thumb characterized by erythema accompanied by painful non-purulent vesicles. Recurrent herpetic whitlow is usually a benign condition. Usually it affects children or healthcare providers, although anyone can become infected.<sup>1-4</sup>

## CASE REPORT

A previously healthy immunocompetent 5-year-old boy presented to the dermatology department with painful blisters on the erythematous base of the index of its right hand (**Fig. 1**).

The patient had three similar episodes in the following 18 months. Then the patient was diagnosed with bacterial whitlow, contact dermatitis and dermatitis of unknown etiology and treated with antibiotics and corticosteroids. His mother told us that the lesions appeared a few days after the onset of an upper respiratory tract infection, and were recurrent mostly in winter. At the examination there was no associated fever. The review of systems was

negative. History of a sore throat a week ago was confirmed. The blood markers for infection were low. The differential diagnosis included herpes viral infection, dyshidrotic eczema, impetigo, scabies, erythema multiforme, insect bites. Swabs from the affected area were taken and cultured for detection and isolation of bacteria and fungi. They showed no growth. But the swabs used for viral detection from pustular vesicles were positive for HSV type 1 by PCR. Systemic and topical acyclovir therapy was initiated and the viral whitlow healed slowly over a period of 3 weeks showing first ulceration, then crusting, and peeling of the remaining dried skin.

## DISCUSSION

Herpetic whitlow is a HSV type 1 or 2 infection of the fingers characterised by several, erythematous and painful, non-purulent vesicles. Herpes simplex virus is spread by direct contact through mucous membranes or broken epidermis. Occasionally, person-to-person transmission occurs from family members with herpes. Herpetic whitlow in children is caused almost exclusively by HSV-1, and in adults it can be caused by HSV-1 or HSV-2. Herpetic whitlow



**Figure 1.** Herpetic whitlow in a 5-year-old boy - photo taken at admission.

lesions appear after an incubation period of 2 to 20 days after inoculation and are associated with pain, regional lymphadenopathy, lymphangitis or pain radiating into the forearm. Fever and systemic symptoms are rare. Some patients report history of a flu-like prodrome before formation of cutaneous lesions as it happened with our patient.

Typically, a single vesicle or cluster of vesicles arises on a single digit after 3 to 4 days of skin irritation or after minor trauma. The vesicles are clear or pale yellow to whitish and are on an erythematous base. They are frequently located on the terminal phalanx of the thumb, index, or long finger near the nail. In our patient the whitlow was on the index digit of the right hand and we found some vesicles that formed a cluster and a single bulla.

Data from literature show that the herpetic whitlow might recur and become recurrent. This phenomenon is typical for the representatives of the *Herpesviridae*. These viruses often go from a dormant state right to active state, and various stimuli such as stress, fever, sun exposure, extreme temperature, ultraviolet radiation, immunosuppression, trauma, etc. have been known to cause it.

Diagnosis of HSV-1 infection is usually made clinically based on the presence of typical lesions and considering the patient's history. However, if the pattern of the lesions is not specific to HSV,

its diagnosis could be done by using viral culture and isolation, serology, direct immunofluorescent assay (DFA), Tzanck test or PCR. In our case, real-time PCR was used to detect the virus in the patient's sample.<sup>5</sup>

According to the treatment of herpetic whitlow there is no standardization and treatment guidelines. In most cases the herpetic whitlow is a self-limiting disease, so, the main goal of treatment is to prevent oral inoculation or transmission of infection and to provide symptomatic relief. Patients with mild disease may benefit from topical therapy. In primary infections, topical 5% acyclovir has been demonstrated to shorten the duration of symptoms and viral shedding. Oral acyclovir is supposed to prevent recurrences.<sup>1,6</sup> We prescribed oral acyclovir together with topical antiseptics and acyclovir 5% cream. And the full treatment achieved recovery.

This case is important as it draws attention to the typical appearance and correct laboratory testing. Herpetic whitlow should be distinguished from other infectious diseases (e.g., bacterial whitlow) and diseases of the skin (e.g., dyshidrotic eczema) because of the different treatments required.

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## Учиться на своих ошибках - случай педиатрического пациента с рецидивирующим панарицием

Весела В. Райкова

Кафедра медицинской микробиологии, Медицинский университет - София, София, Болгария

**Адрес для корреспонденции:**

Весела В. Узунова-Райкова, Кафедра медицинской микробиологии, Медицинский университет - София, ул. „Здраве“ 2. 1431 София, Болгария

E-mail: pumpri@abv.bg

Tel: +359 2 9172580

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**Введение:** Герпетический панариций - это инфекция вирусом простого герпеса пальцев рук или большого пальца, которая характеризуется покраснением и сопровождается болезненными негнойными везикулами.

**Цель:** Привлечь внимание к типичному типу герпетического панарициума и отличить его от бактериальных инфекций и других типов кожных заболеваний из-за другого способа борьбы с ним.

**Материалы и методы:** Были установлены история заболевания и дерматологический статус, а также изъяты выделения из пузырьков. Секреты культивировали для выделения бактерий и грибов. Были проведены экстракция ДНК и ПЦР для определения наличия ВПГ.

**Результаты:** В анамнезе пациента были выявлены повторяющиеся идентичные инфекции, которые часто были связаны с респираторными инфекциями. Анализированные выделения на предмет наличия бактерий и грибов оказались отрицательными. Образец везикулы, использованный для обнаружения наличия вирусов, был положительным на ВПГ.

**Выводы:** Важно различать герпетический панариций от инфекционных и кожных заболеваний и учиться на уже допущенных ошибках - у пациента уже был диагностирован бактериальный панариций, контактный дерматит и дерматит неизвестного происхождения.