

CASE REPORT

Genital Herpes Simplex Virus Infection in 4-Year Old Girl

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ABSTRACT

Prepubertal genital herpes simplex virus (HSV) infection is rare. A four-year old girl was consulted for red spots on genital. Spots were itchy six days before but became painful with genital discharge and pain on urination four days before. History of sexual abuse, oral or genital ulcers was denied. There were erythema, edema, multiple circular ulcers with purulent discharge on labia minora. Gram examination showed leukocytes and Gram-negative cocci. Dark field and Tzanck examination were negative. Fecalalysis was normal. IgG to HSV-1 were reactive in acute and convalescence serum. Normal saline compress, fusidic acid cream, paracetamol, azithromycin, and aciclovir provided resolution of lesions. Assessment was genital ulceration due to first-episode nonprimary HSV infection, suspected due to HSV-1. Parents were educated on possible sexual abuse. Clinical manifestation, response to treatment and serology established diagnosis but cannot confirm etiologic subtype.

Keywords: Herpes simplex, Sexually transmitted disease, Serologic tests

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INTRODUCTION

Herpes simplex virus (HSV) is the most common cause of genital ulcer, however it is rare in pre-pubertal children and should raise concern for sexual abuse (1,2). This is a case of a female child with genital ulcer due to HSV infection, suspected due to HSV-1.

CASE REPORT

A 4-year old girl was brought by her mother to Dermatology and Venereology Outpatient Clinic with complaint of red spots and discharge from her genital area. Six days before, itchy red spots were noted on patient's genital which were often scratched by patient. Her mother sought consult to pharmacist and patient was given mebhydrolin napadisylate half tablet, three times daily but without improvement. Four days before, pain on lesions and scanty, cloudy, foul-smelling discharge from patient's genital were noted. Her mother sought consult to pharmacist and patient was given erythromycin syrup, mefenamic acid half tablet, dexamethasone half tablet and chlorpheniramine maleate half tablet, all of which taken three times daily, but without improvement. Pain was felt when urinating and patient became reluctant to urinate. Fever was

denied. Previous oral and genital ulcers were denied. History of other illness or drug allergy was denied. History of sexual intercourse or abuse was denied. Patient stayed at home with her parents. Her mother always accompanied patient at home, but sometimes she played with other children when family visited her grandparents. History of sexually transmitted illnesses on patient and both parents was denied.

Dermatologic status showed erythema, edema and multiple well-defined circular 3-4mm ulcers with purulent yellowish-green discharge on labia minora (Fig. 1). No discharge was seen from vaginal canal. Inguinal lymphadenopathy was absent. Other review of the systems were unremarkable. Body weight was 18.9 kg. Gram examination showed leukocyte 2-4, epithel 2-4 from urethra, leukocyte >25, epithel 6-8 and gram negative cocci from ulcer (Fig. 2). Dark field examination was negative. Tzanck smear showed no multinucleated giant cells (Fig. 3).

Assessment was nonspecific genital ulceration suspected due to HSV infection versus enterobiasis, with secondary bacterial infection. Fecalalysis and serologic tests for HSV were requested. Patient was given normal saline compress 15 minutes followed by fusidic acid cream, three times daily, paracetamol syrup 150mg three times daily, azithromycin syrup 200mg once daily for 5 days, and aciclovir 200mg four times daily for 7 days.

Two days after consult, fecalalysis showed normal results.



Figure 1: Physical examination of external genitalia showed erythema, edema and multiple well-defined circular ulcers with yellowish-green discharge on labia minora

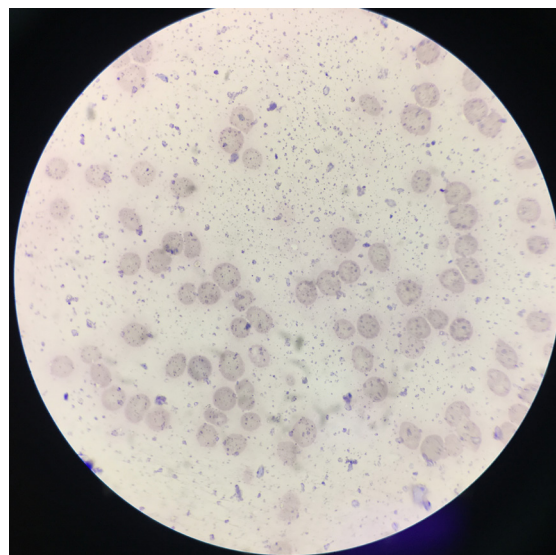


Figure 3: Smear was taken from ulcer base and processed with Giemsa stain (Tzanck smear), showing no multinucleated giant cells

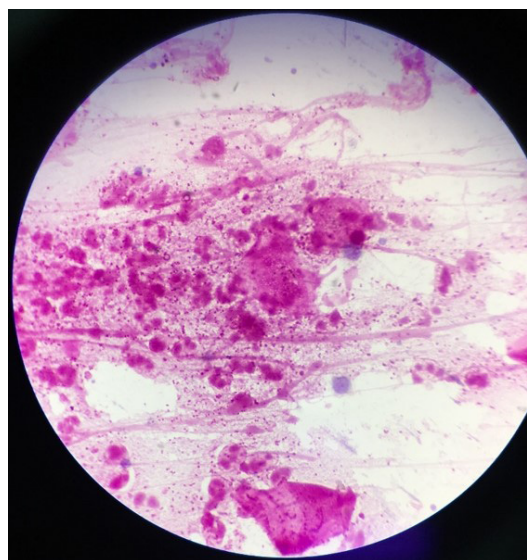


Figure 2: Smear was taken from ulcer base and processed with Gram stain, showing many leukocytes and Gram-negative cocci



Figure 4: Physical examination of external genitalia on follow up after 1 week showed hypopigmented macules on labia minora

HSV serology showed reactive IgG to HSV-1 (64.46 U, reactive >11U), and nonreactive IgM to HSV-1, IgM and IgG to HSV-2. Patient's mother also noted that lesions started to dry with decreasing pain and patient was able to urinate comfortably. One week after consult, ulcers, discharge, pain and dysuria resolved leaving hypopigmented macules on labia minora (Fig. 4). Assessment was genital ulceration due to first-episode nonprimary HSV infection. Parents were counselled on transmission sources and to be aware of possible sexual abuse to patient. Repeat serology after 10 weeks showed reactive IgG to HSV-1 (30.20 U, reactive > 11U), and nonreactive IgM to HSV-1, IgM and IgG to HSV-2. Final assessment was genital ulceration due to first-episode nonprimary HSV infection, suspected due to HSV-1.

DISCUSSION

Genital ulcer in female child is very concerning for parents because of suspicion of sexual abuse (1). This condition can be due to infectious causes such as HSV, syphilis, and chancroid, or non-infectious causes such as vulvar aphthous ulcer (1,2). Genital HSV infection is mostly caused by HSV-2, but HSV-1 has been increasingly found. Classical presentation is grouped erythematous papules and vesicles coalescing to form erosions, or ulcers in severe cases. First-episode cases may be accompanied by fever, pain, dysuria, and inguinal lymphadenopathy (1,2).

Diagnosis of HSV infection can be made clinically. Laboratory tests to confirm suspicion in nonclassical cases or to determine HSV type include Tzanck smear,

viral culture and serologic assays. Tzanck smear confirm HSV infection by finding multinucleated giant cells, but has low sensitivity. Viral culture is the gold standard for diagnosis. Serology detects antibodies to specific type of HSV and differentiates primary and nonprimary first-episode genital herpes (3).

Primary infection is first infection with HSV. It shows no antibodies in acute serum, fourfold increase of type-specific HSV IgG and/or positive IgM in convalescence serum. Nonprimary infection is outbreak of HSV in a person with previous HSV infection. It shows positive type-specific HSV IgG in acute and convalescence serum with or without HSV-specific IgM (3,4). Limitation of serology includes false-negative IgM in almost 50% of culture-positive cases. Most recurrent cases did not demonstrate significant increase in antibody titer. Serology also cannot distinguish location of infection (5). Seropositivity to HSV-1 alone is difficult to interpret due to presence of HSV-1 antibody from oral infection and increasing genital HSV-1 infection. Seropositivity to HSV-2 is generally consistent with anogenital infection. Seronegativity to HSV-2 does not exclude possibility of HSV-2 infection (3).

Recommended treatment for pediatric genital HSV infection is oral acyclovir. It is given at 40-80 mg/kg/day in 3-4 divided doses for 7-10 days or until clinical resolution (2).

This patient initially presented with multiple painful grouped erosion, purulent discharge and dysuria, however, pruritus was noted by mother. Differential diagnosis were genital HSV infection, primary syphilis, chancroid, enterobiasis and vulvar aphthous ulcer. Diagnosis of genital HSV infection was based on classical clinical presentation, although Tzanck smear was negative. Painful ulcers and negative dark field examination ruled out primary syphilis. Gram examination did not show Gram-negative bacilli in school-of-fish pattern but showed Gram-negative cocci, ruling out chancroid. Vulvar aphthous ulcer presents as multiple large ulcers which was different from small ulcers in this patient. Initial pruritus raised suspicion of enterobiasis which presents as perineal pruritus (1), but was ruled out by normal fecalysis. Treatment included acyclovir 200mg four times daily (approximately 40mg/kg/day) for 7 days for HSV infection, azithromycin and fusidic acid cream for secondary bacterial infection,

paracetamol as analgetics, and normal saline compress to clean the lesions. Rapid response to aciclovir further supported diagnosis of HSV infection.

Presence of IgG to HSV-1 in acute and convalescence serum indicated first-episode nonprimary HSV infection. Absence of IgM to HSV may be due to low sensitivity of this test. Declining IgG titer is not unusual because only less than 5% of recurrent cases showed increased antibody titer (5). Nonprimary HSV-1 infection is possible. Nonprimary HSV-2 infection cannot be ruled out. Viral culture would have established the infecting type if available. Final assessment was genital ulceration due to first-episode nonprimary HSV infection, suspected due to HSV-1. Parents were counselled for possibility of sexual abuse to patient.

CONCLUSION

Presence of multiple painful grouped erosions on labia minora, rapid response to aciclovir, and positive IgG to HSV-1 in acute and convalescence serum established diagnosis of genital ulcer due to first-episode nonprimary HSV infection. Dark field and Gram examination and fecalysis helped to rule out differential diagnosis. Serologic tests cannot confirm type of HSV and viral culture would have been helpful if available.

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