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Wyprysk opryszczkowy u niemowlęcia – opis przypadku

Eczema herpeticum in an infant – a case report

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Streszczenie

Wyprysk opryszczkowy jest przewlekłą chorobą skóry przebiegającą z obecnością zmian skórnych o charakterze nadżerek i owrzodzeń. Schorzenie to występuje u dzieci, głównie młodszych. Przedstawiony w niniejszej pracy przypadek kliniczny ukazuje ciężki przebieg zakażenia wywołanego przez herpeswirus współistniejącego z atopowym zapaleniem skóry u 5-miesięcznego niemowlęcia. W trakcie badania u dziecka stwierdzono wysypkę w postaci pęcherzyków i krost obecnych na całym ciele, szczególnie zaznaczoną na skórze twarzy, głowy, szyi i klatki piersiowej. Wpływ infekcji na przebieg procesów alergicznych stanowi złożone i niejednoznaczne zagadnienie. Wykazano, że zakażenie może przyczynić się do rozwoju alergii i zaostrzyć przebieg już istniejącego zapalenia alergicznego. W ostatnich latach coraz więcej badań wskazuje na profilaktyczny wpływ infekcji na rozwój patologii alergicznej u dzieci, szczególnie w pierwszych latach życia.

Słowa kluczowe: wyprysk opryszczkowy, wirus opryszczki pospolitej, diagnostyka

Abstract

Eczema herpeticum is a chronic dermatosis with erosive and ulcerative lesions of the skin in children of a predominantly young age. The clinical case presented in this article shows the severe course of herpesvirus infection combined with atopic dermatitis in a 5-month infant. A rash in the form of vesicles and pustules throughout the body with a predominant localisation on the skin of the face, the scalp, neck, and chest was found in the course of the examination of the child. Influence of infections on the course of allergic processes is an ambiguous and complicated issue. It has been proved that an infection can contribute to the development of allergies and exacerbate the course of already existing allergic inflammation. In recent years, an increasing number of studies have shown the preventive effect of infection on the development of allergic pathology in children, especially during the first years of life.

Keywords: eczema herpeticum, herpes simplex virus, diagnosis

INTRODUCTION

Eczema herpeticum (synonyms: Kaposi varicelliform eruption, Kaposi–Juliusberg dermatitis, acute generalised exanthematous pustulosis) is a disseminated herpes virus infection that complicates the course of chronic dermatoses with erosive ulcerative skin lesions in young children, rarer in adolescents and adults, which usually develops on the background of a weakened immune system^(1,2). Eczema herpeticum often complicates the course of chronic dermatoses. It should be noted that it most often (in 90–95% of cases) develops in association with atopic dermatitis. Various researches describe cases of eczema herpeticum in association with seborrheic dermatitis, Darier's disease, and in cases of thermal burns and acne^(3,4).

Thus, to date, eczema herpeticum is considered as one of the forms of herpetic infection, the most common cause of which is HSV type 1 (*Herpes virus hominis typus 1*)^(2,5). It has been shown that this pathology more often develops in children who experienced the debut of atopic dermatitis at a very early age – in the first 2 months of life. Moreover, the overwhelming majority of ill children were on early formula feeding^(6,7).

The highest incidence of eczema herpeticum is reported among children aged from 6 months to 2 years. The emergence of this complication at an early age is largely due to a sharp fall in the level of antibodies to the herpes virus (transmitted intrauterinely) in infants younger than 6 months of age^(3,5). According to A. Vitko, the dynamics of the level of antibodies to HSV in young children are as follows: at the age of 4 days – 5 months in 94% of children, antibodies to HSV are determined, age of 6–12 months in 20%, 1–2 years – in 60% (the child already has their own antibodies). These age dynamics of the level of antibodies can explain the peak of the disease of eczema herpeticum among children aged 7–12-months^(3,8).

CASE REPORT

Below we present a personal observation of a child with eczema herpeticum.

A 5-month-old patient (D.) was born from the first pregnancy, with a timely due date and with a weight of 3,500 g. The child experienced manifestations of allergic diathesis from birth, while atopic dermatitis was diagnosed at 3 months of age. During the last three weeks, atopic dermatitis became worse. The child received homeopathic treatment that was ineffective. It should be noted that homeopathic treatment of atopic dermatitis is not the method preferred by global and European allergy institutions, but it was used by parents without a doctor's prescription. At the same time, the child's mother started to suffer from herpes infection on her lips.

There was no family history of allergic diseases. The child was breastfed, physical development was within normal ranges.

At the time of admission – complaints regarding the rash all over the body, a temperature increase up to 38.8°C, irritability. The complaints mentioned above escalated during the subsequent 24 hours.

On examination – a rash throughout the body with a predominant localisation on the skin of the face, the scalp, neck, and chest was found. The nature of the rash – vesicles, pustules, massive erosive areas. Generalised lymphadenitis was observed with the child's reaction of crying when some of the lymph nodes were palpated.

In the diagnostic search process, streptoderma was excluded.

Paraclinical examination: general blood test – left shift of the leukocyte formula, zero eosinophils; immunogram – IgG – 2.9 IU/mL (N – 4.25 ± 1.8), IgA – 0.01 IU/mL (N – 0.28 ± 0.18), IgM – 0.01 IU/mL (N – 0.48 ± 0.17), IgE – 703.8 IU/mL (N – 25–100); herpes simplex virus type 1 (HSV-1) IgM – 295.7 EU/mL (N <100). A rapid test for HIV infection was negative.

Consultation with an ophthalmologist: OD – sanus. OS – upper and lower eyelids affected by the herpes rash, the conjunctiva slightly hyperemic, the cornea clear, smooth, spherical. The lens transparent.

Consultation with an infectious disease physician: the nature of the rashes and the clinical features raise a suspicion of herpetic aetiology of the disease.

Consultation with a neurologist: symptoms of increased neuro-reflex excitability.

The child received a comprehensive treatment: antiviral therapy (acyclovir), antibiotic therapy (ceftriaxone), and antihistamines (chloropyramine). Oral acyclovir was used as first-line treatment at a dose of 25 mg/kg/day four times daily for 7 days. Secondary bacterial skin infection was treated with systemic antibiotic ceftriaxone at a dose 50 mg/kg/day IV twice a day for 5 days. Chloropyramine hydrochloride was used to reduce the intensity of itching at a dose 0.25 mL IV twice a day for 5 days. External therapy included soothing skin balm and panthenol and was applied until complete skin regeneration. As a result of the prescribed therapy, the patient's condition improved, the elements of the rash gradually regressed, and on day 20 of the stationary treatment, the boy was discharged home in a satisfactory condition.

Skin lesions during the observation period are shown in Figs. 1–6.

DISCUSSION

A relative with herpes simplex virus (mother, father, etc.) is often the source of infection in cases of childhood eczema herpeticum. As a rule, when examining relatives it is possible to detect residual manifestations of herpes simplex, located mainly on the lips, nasal wings, conjunctiva of the eyes, and hands. The routes of transmission of the virus are diverse. The most common are airborne and direct (contact) transmission paths. Herpes simplex virus manifests in patients in different secrets, depending on the localisation of the sores



Fig. 1. Skin lesions (face, neck, chest): day 2 of the disease



Fig. 2. Skin lesions (hand and wrist): day 2 of the disease



Fig. 3. Dynamic observation (face): day 6 of the disease



Fig. 4. Dynamic observation (hand and wrist): day 6 of the disease



Fig. 5. Dynamic observation (face): day 10 of the disease

(the content of vesicles, saliva, tears). Accordingly, the infection occurs in contact with the affected skin, the mucous membrane of the oral cavity, or the saliva of the patient. HSV becomes inactivated at room temperature after 10 hours, so the infection through the items of common use is also possible^(1,9).

The incubation period is 2–7 days, but it can sometimes extend to 10 days. The seasonal increase in morbidity is observed in the second half of autumn, in winter, and at the beginning of spring⁽²⁾.

In the vast majority of cases, the onset of the disease is acute. The acute period is rarely preceded by a prodromal, during which parents can notice somnolence and anxiety



Fig. 6. Dynamic observation (face): day 14 of the disease

in the child. The prodromal period lasts 1–3 days and ends with a sharp deterioration of the child's condition, with an increase in body temperature up to 39–40°C. Severe intoxication, tachycardia, tachypnea are also common symptoms of the diseases. The fever period lasts 6–10 days and coincides with the appearance of rashes. The temperature reaction is constant, fluctuates within a day within 1 degree, and is poorly managed by antipyretic medication.

The most common localisation of the rash is the skin of the face (cheeks, forehead, parotid folds, auricles), hairy part of the head, neck, arms (dorsum of the hand, forearms), rarely - the back surface of the foot, buttocks. In severe cases, the rash can be generalised⁽²⁾.

Rashes on the skin and mucous membranes, which are most important for the diagnosis of eczema herpeticum, are the most typical skin symptoms of the disease. The acute temperature increase is accompanied by erythematous elements, which after 6–12 hours evolve into papulo-vesicles, vesicles, and pustules. Vesicles and pustules have a fairly typical appearance: approximately the same size (1–3 mm in diameter) with a groove in the centre and an inflammatory border on the periphery. Most of the elements are grouped, later erosions blur together, forming large erosive areas that gradually dry up and are covered with a haemorrhagic crust (dark brown colour). Skin irritation with the formation of bleeding erosions, deep cracks and stratification of massive haemorrhagic crusts is common^(1,2). New lesions may appear throughout the week. In the case of a relatively non-severe course of the disease, haemorrhagic crusts disappear after 6–10 days. Sometimes, skin atrophy remains in place of rash in the form of barely noticeable scars of 3–5 mm in diameter. Simultaneously with rashes mucous membranes of the oral cavity, pharynx, and genital

organs can be involved in the pathological process. There is a 10–15% chance of developing conjunctivitis and keratoconjunctivitis. The most severe course of eczema herpeticum is recorded in children under one year of age⁽³⁾. Fatal cases are possible.

In all patients, regardless of the severity of the disease, regional lymphadenitis could be observed (enlargement of the submandibular, cervical, occipital lymph nodes). Hepatosplenomegaly and splenomegaly are recorded in 60% and 20% of cases, respectively.

Diagnosis is based significantly on the following laboratory reports or test results:

1. Cytological examination. The contents of the ulcers (Tzanck test) are studied. Multinucleated giant cells with intranuclear inclusions are detected in smears made from fluid and cells of the ulcer bottom. Such patterns are common in herpetic infections in general⁽²⁾.
2. Virological examination on cell culture (the most specific, but labour-intensive and expensive method). Identification of the virus is carried out on chicken embryos, laboratory animals that are injected with the infected material of the patient (the content of vesicles, nasopharyngeal wash, conjunctiva of the eye)^(1,2).
3. Serological examination (the most common method). Determination of IgG and IgM antibodies against herpes simplex virus (HSV type 1 and type 2) in the blood serum. The appearance of specific antibodies of the IgM class in the blood serum indicates an acute illness, re-infection or exacerbation of a latent infection. Detection of the IgG antibodies in children up to 6 months may be due to their infection through the placenta from the mother, and in older children – evidence of chronic infection. A significant increase in the titre of specific IgG in the dynamic of the disease is expected (a fourfold increase in titre indicates the activation of the herpetic infection)⁽¹⁾.
4. Molecular-genetic study (fast and specific method). Carrying out a polymerase chain reaction to detect HSV DNA⁽¹⁻³⁾.

Patient's haemogram: hypochromic anaemia, leukocytosis (frequent infection of the elements), eosinopenia. In the general urine tests – an elevated level of protein and leukocytes may appear (1–10 in the field of vision).

Treatment should be comprehensive. When choosing a therapeutic tactic, the general condition of the patient, the prevalence and nature of the elements, the stage of rash, age, and the presence of complications should be all taken into account^(2,6). Hospitalisation is obligatory, and the patients are isolated in separate boxed wards.

The diet should correspond to the age of the patient. In children under one year of age- the maximum extension of breastfeeding is recommended. For the purpose of detoxification – intense hydration (frequent breastfeeding), infusion therapy (5–10% glucose solution, saline).

Acyclovir is used as etiotropic antiviral therapy⁽¹⁰⁾. For the prevention of bacterial infection complications – antibacterial drugs should be prescribed for 7–10 days.

The volume of external therapy is determined by the stage of the process. At the initial stage, the vesicles and pustules are treated with aniline dyes, after which antiherpetic ointments are applied.

The prescription of antiviral agents for external use should be performed no later than 48 hours after the appearance of the rash. Intentional removal of the haemorrhagic crust is forbidden, as it can cause bleeding, formation of deep erosions and cracks, and scarring in the future. After the crusts fade out, keratoplastic agents are used⁽⁶⁾.

This clinical case of eczema herpeticum demonstrates the severe course of herpesvirus infection with atopic dermatitis in an infant. It is known that infections might significantly influence the severity of allergic processes and both of these processes are quite complicated in nature. On the one hand, it has now been proven that the infection can contribute to allergies and exacerbate the already existing allergic inflammation. On the other hand, in recent years, an increasing number of studies have shown the preventive effect of infection on the development of allergic pathology in children, especially in the first years of life. In such a complicated and ambiguous situation, it is challenging to navigate paediatricians. And the most difficult questions are: How do infections affect the already formed allergic pathology? What should be our medical approach in such situations? We managed to present the answers to the questions of this particular clinical case in our message.

CONCLUSIONS

The study showed a high prevalence of eczema herpeticum in children who experienced the debut of atopic dermatitis at a very early age. The most common cause of this infection is HSV type 1 and a relative is often the source of infection. Eczema herpeticum is a potentially fatal condition and patients require immediate and effective antiviral therapy. This is why it is so important to recognise the signs and symptoms of the disease, prescribe appropriate treatment and prevent severe complications.

Conflict of interest

The authors do not report any financial or personal connections with other persons or organizations that might negatively affect the content of this publication and / or claim authorship rights thereto.

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