International Journal of Pediatrics and Genetics
Vol. 2 No. 6 (2024)
ISSN: 2995-5483

Candidiasis of Newborn Children

Bahodirov Behruz Shavkat og'li
Bukhara state medical institute after named Abu Ali ibn Sino

Abstract: Candidiasis or an infectious process caused by fungi of the genus Candida has been known for a long time. However, over the past three decades, an increase in the frequency of mycoses in the pathology of childhood and candidiasis, in particular, including in newborns, has been recorded. Thus, clinical manifestations of fungal infection of the skin, mucous membranes and gastrointestinal tract (GIT) in newborn children who fell ill in the first hours or days of life were noted by us in 30–33% of children admitted to the hospital, and among apparently healthy newborns staying at home conditions, candidiasis was reported in 13–16% of cases.

Key words: candidiasis, newborn children, infection.

Features of the skin of a newborn child, such as thin dermis and epidermis due to the smaller number of cell layers than in adults, the loose arrangement of the main structural components of the skin and mucous membranes, contribute to weaker mechanical protection of the skin and mucous membranes. The imperfection of the secretory function of the skin is accompanied by a lack of its bactericidal activity and a higher pH level. The mucous membranes of the oral cavity in newborn children are characterized by a low ability to salivate and reduced activity in the saliva of lysozyme and apolactoferrin, which have antifungal activity. The structural features of the gastrointestinal mucosa, its secretory and protective functions, and the presence of "physiological" intestinal dysbiosis contribute to the greater vulnerability of the gastrointestinal tract in newborns to any opportunistic infection and fungal infection in particular.

Also, certain features of the reactivity of a newborn child's body contribute to the development of candidiasis. These are low opsonizing and phagocytic activity of blood cells, functional deficiency of T- and B-cell immunity, lower levels of acute phase proteins of inflammation and nonspecific mycotic inhibitors, as well as a number of other mediators of the immune response (γ interferon, interleukin 1α, tumor necrosis factor α), which increases the risk of developing a fungal infection.

It is obvious that in the neonatal period, as a result of the physiological characteristics of the structure of the skin and mucous membranes in children and the imperfection of the protective reactions of their body, favorable conditions are created for the fungal infectious process, which includes the colonization of the epithelium of the mucous membrane and/or epidermis of the skin by fungi and the creation of conditions for the development of fungal invasion inside the tissues.

In newborns, there are two routes of infection with fungi of the genus Candida: intrauterine and postnatal. The intrauterine route of infection involves the development of congenital candidiasis, which is the result of transplacental or ascending infection of the fetus. In the work of Kalashnikova E.P. and Bashmakova M.A. it was shown that fungi of the genus Candida were detected in amniotic fluid in 11 cases out of 34, and in 6 cases in meconium and mucus from the nasopharynx of newborns immediately after birth. We obtained similar data in our works. According to our data, the primary meconium of 4.6% of newborns was contaminated with fungi of the genus Candida. According to Buslaeva G.N., when studying the polymerase chain reaction for fungi of the genus Candida, carried out during childbirth in women in labor with candidiasis and their fetuses, a positive reaction was detected in the study of amniotic fluid, placenta, venous and arterial blood of the fetal umbilical cord,

Vol. 2 No. 6 (2024)
ISSN: 2995-5483

which indicated the possibility development of congenital candidiasis if colonization by fungi has been achieved.

The postnatal route of infection often develops during the use of antibacterial therapy in a newborn, but it can also develop "spontaneously", as a result of infection of a newborn through the hands of medical personnel or the mother, or when candidiasis occurs in the gastrointestinal tract of the child himself. Clinically, damage to the skin and/or mucous membranes and/or gastrointestinal tract is also noted, which usually appears on the 6th–11th day of life.

In congenital skin candidiasis, the process is most often caused by C. albicans, although isolated cases caused by C. parapsilosis, C. glabrata and C. tropicalis have been described, including by us. More often it appears on the 1st or 2nd day of life, although the child may be born with skin lesions. Common, multiple pustules with undermined edges are characteristic. There is no feverish reaction. Since the fetus is usually presented in a cephalic position, skin manifestations usually affect the upper part of the child's body - head, face, upper limbs, back. The skin of the abdomen is practically not captured. The mucous membranes remain intact. In the analysis of peripheral blood, leukocytosis and neutrophilia can be determined.

Acquired cutaneous candidiasis in newborns is caused by C. albicans in only 60–65% of cases, as evidenced by our studies. In other cases, skin candidiasis, especially in the folds on the torso of children, is caused mainly by C. tropicalis and C. parapsilosis [8, 9]. Acquired cutaneous candidiasis usually occurs together with oral candidiasis. Initially, the skin in the axillary and inguinofemoral folds is affected. Further, in the absence of therapy, the skin of the inner and back surface of the thighs, up to the shins, and the folds of the neck are involved in the process. Candidiasis can also affect the child's genitals. In advanced cases, the skin of the abdomen and back is involved in the process. In rare cases, the entire skin of the child is involved. This is the so-called intertriginous dermatitis, which is characterized by the presence of confluent, erythematous, swollen areas with small blisters and pustules. They quickly open with the formation of erosions. The erosive surfaces merge into large lesions with clearly contoured, scalloped edges and an undermined epidermal rim. The surface of the erosions is dark red, smooth, shiny, varnished, and tense.

In some places there are areas of skin maceration with the presence of whitish, crumbly layers. Along the periphery of the erosions, pinpoint vesicles, small pustules and erythematous scaly spots are scattered.

Another variant of skin lesions is candidiasis diaper dermatitis. It usually develops in children who carry Candida fungi in their intestines. Moist skin, airtight diapers or diapers, which create an optimal environment for fungal growth, contribute to the development of diaper dermatitis. The disease is manifested by the appearance of numerous papules and vesicles, which then merge to form erythematous plaques with a fringed border and a clearly defined edge. Typically, the process involves the skin of the perianal, intergluteal areas, inguinal folds, perineum and lower abdominal wall. In boys, the skin of the scrotum and penis may be affected with the development of erosive balanitis, in girls - the labia and vagina. Inflammatory changes in the form of swelling and hyperemia of the mucous membrane with clear scalloped edges are combined with the presence of grayish-white films or cheesy layers. Possible itching, difficulty and pain when urinating, and the appearance of dysuria.

Thus, a feature of acquired skin candidiasis is the dark red color and varnish shine of the lesions, a moist rather than weeping surface of the skin, distinct boundaries and scalloped outlines; the presence of fresh blisters, pustules and small erosions around the main large erosions. The degree of damage to the skin in children ranges from single elements (according to our data, in 86% of children) to almost total damage to the entire surface of the body (in 14% of children). In the first case, the child's condition does not suffer, there is no temperature reaction, and no changes are noted in peripheral blood tests. In the second, there is a disturbance in the general condition in the form of anxiety, crying, and loss of appetite. As a rule, there is no temperature reaction, but blood tests show a

Vol. 2 No. 6 (2024)
ISSN: 2995-5483

tendency towards leukocytosis and neutrophilia. If a bacterial infection occurs, the condition worsens and signs of infectious toxicosis appear.

It is necessary to differentiate acquired skin candidiasis mainly in advanced cases. Differential diagnosis is carried out with streptococcal and staphylococcal diaper rash, which is characterized by weeping, which is not typical for skin candidiasis, impetiginous elements with the formation of crusts, slight or completely absent peripheral maceration of the skin. In some cases, mainly in advanced cases of acquired candidiasis, it is necessary to carry out laboratory confirmation of the diagnosis of candidiasis. Its necessity is also dictated in children in the first days of life by the fact that the clinical picture of congenital cutaneous candidiasis is similar to other dermatoses in newborns. For this purpose, scrapings and cytological smears are made from the lesion on the skin. The diagnosis is confirmed either by the detection of pseudomycelium of the fungus, or a budding fungus in the preparation, or by isolating a culture of the pathogen from a lesion on the skin. In addition, scraping of the oral mucosa and microscopy of stool are done to identify fungi of the genus Candida and candidiasis.

Candidiasis of visible mucous membranes, as already mentioned, occurs quite often in newborns. In most cases it is caused by C. albicans. This type of fungus is found in the oral cavity in at least 25–40% of newborns already on the 1st day of life. This is due to the fact that during the birth process, the newborn seems to lick the mother's birth canal through which he passes. But in women, carriage of fungi in the genitals is a common occurrence. Children born to women suffering from urogenital candidiasis develop oral candidiasis 20 times more often than those born to mothers who are healthy carriers of fungi in the genitals.

Subsequent infection with C. albicans occurs through transmission through the hands of the mother and medical staff. In the case when normal carriage turns into an inflammatory process, oral candidiasis develops. This occurs in 5–10% of newborns. Unsanitary conditions for caring for newborns contribute to the development of oral candidiasis; diseases that reduce the resistance of the child's body; the presence of malformations of the oral cavity; newborn baby thumb sucking; massive antibiotic therapy.

References:

1. Самсыгина Г. А. Кандидоз новорожденных детей //Педиатрия. Журнал им. ГН Сперанского. – 2008. – Т. 87. – №. 5. – С. 104-108.
2. Климко Н. Н., Козлова О. П. Инвазивный кандидоз у детей //Журнал инфектологии. – 2021. – Т. 13. – №. 2. – С. 14-26.
3. Диникина Ю. В., Белогурова М. Б. Инвазивный кандидоз у детей с онкологическими заболеваниями: эпидемиология, диагностика (обзор) //Проблемы медицинской микологии. – 2018. – Т. 20. – №. 4. – С. 3-9.
4. Чумичева И. В. и др. Орофарингеальный кандидоз у детей //Детская оториноларингология. – 2021. – №. 1. – С. 16-20.
5. Колбин А. С. и др. Инвазивный кандидоз у детей с обширными термическими поражениями //Вопросы современной педиатрии. – 2005. – Т. 4. – №. 4. – С. 17-19.