GENERALIZED CUTANEOUS CANDIDIASIS IN A PRETERM BABY IN LAGOS: A CASE REPORT

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Summary

Background

Generalised cutaneous candidiasis is rare in the neonatal period. When it does occur there is a risk of disseminated disease, particularly in preterm infants.

Method

A case report of a preterm baby who developed extensive cutaneous candidiasis

Result

A 45 day old product of 30 weeks gestation noticed to develop reddish discolouration involving the perineum, lower anterior abdominal wall, both axillae, both hands and face. Treatment with topical ketoconazole and cotrimaxazole resulted in recovery.

Conclusions

Generalised cutaneous candidiasis in neonates is a rare disorder that results from Candida spp infection. This is probably the first report of generalised cutaneous candidiasis in neonates from a Nigerian institution. It further draws attention to the importance of cutaneous candidiasis among the increasing population of preterm survivors in the country.

Keywords: preterm baby, cutaneous candidiasis

Introduction

Cutaneous candidiasis refers to infection of the skin with fungi of the genus *Candida*. Although candidal infections are common in the neonatal period, to the best of the authors' knowledge, there is no prior report of generalised cutaneous candidiasis in a Nigerian neonate. We report a case of generalized cutaneous candidiasis in a preterm infant.

Case Report

Baby O.F., is a product of vaginal delivery at 30 weeks gestation in a private hospital located in Lagos. The birth weight was 920g. The baby was admitted twelve hours (12 hours) after delivery into the out-born neonatal unit of Lagos State University Teaching Hospital, Ikeja for management of her preterm, extremely low birth weight condition.

On the forty-fifth (45^{th}) day of life, a reddish discolouration on the perineum was noticed. The discolouration spread rapidly to involve the lower anterior abdominal wall, both axillae, both hands, both upper thighs and the face (figures 1 and 2). There was no blister associated with the discolouration. There was no associated history of fever. The baby was fed with breast milk only. There was no history of vaginal discharge in mother.

Physical examination revealed erythematous patches with sharply defined margins on the face, both axillae, lower anterior abdominal wall, both hands, both upper thighs and perineum. The skin lesions were not scaly and there was no oral thrush. There was no clinical evidence of on-going infection.

A clinical diagnosis of generalised cutaneous candidiasis was made. There was no facility for isolation and culture of fungus in our health facility. The application of clotrimazole cream twice daily with alternate day application of ketoconazole shampoo was commenced. By the end of third (3^{rd}) week of topical treatment, the skin lesions were noticed to have significantly resolved with skin pigmentation in the affected areas.

Figure 1: Generalized Cutaneous Candidiasis in a Preterm Infant involving the Abdomen, Perineum and Thighs

Figure 2: Generalized Cutaneous Candidiasis in a Preterm Infant involving the Head, Trunk and Limbs

Discussion

Cutaneous candidiasis is an infection of the skin with candida. It may involve almost any skin surface on the body, but usually occurs in warm, moist, creased areas (such as axillae and groins).

The skin of the infant differs from that of the adult, in that it is thinner, less heavy, has weaker intercellular attachments and produces less sweat and sebaceous gland secretions. Although much has been reported on the various disorders peculiar to the skin of infants, very little is known about variations and activity of the skin in neonates.[1]

Neonatal cutaneous candidiasis has become increasingly prevalent in neonatal intensive care nurseries.[2] Postnatal acquisition has been attributed to increased survival rates of low birth weight babies in association with an increased number of invasive procedures and widespread use of broad-spectrum antibiotics[2]. Neonatal candidiasis usually presents 3-7 days after birth with oral thrush and diaper dermatitis. This has been attributed to mucosal contact with the organism during labour and delivery.

About 85 to 90% of infants with oral thrush harbour *C. albicans* in the intestine and faeces. In most patients, candidal diaper dermatitis is the result of progressive colonization from oral and gastrointestinal candidiasis. Infected stools represent the most important focus for cutaneous infection and moist, compromised skin is particularly susceptible to invasion by *C. albicans*. Additional factors that predispose infants to candidal diaper dermatitis include local irritation of the skin by friction; ammonia from bacterial breakdown of urea, intestinal enzymes, and stool; detergents; and disinfectants.

The eruption of cutaneous dermatitis usually starts in the perianal area, spreading to involve the perineum, and in severe cases, the upper thighs, lower abdomen, and lower back are involved as obtained in the reported case. Maceration of the anal mucosa and the perianal skin often is the first clinical manifestation. The typical eruption begins with lesions which consist of beefy-red plaques, often with scalloped borders. Satellite papules and pustules may be observed surrounding the plaques and maceration is often present, especially in intertriginous areas.

Definitive diagnosis of cutaneous candidiasis is made by microscopic demonstration of spores and pseudohyphae of *C. albicans* in the skin scrapings and culture of the organism from lesions including macular erythematous patches and erosions in extremely premature infants.[3]

Given the benign nature of cutaneous candidiasis in preterm infants, there has been no proven benefit of intravenous therapy. Based on anecdotal experience however, topical and oral

therapy has been recommended by some authors to decrease the number of viable organisms on the skin and in the gastrointestinal tract and, presumably, to lower the risk of systemic spread[4]. Our patient received only topical treatment without oral or parenteral antifungal agents and did well, despite the widespread nature of her eruptions. Could systemic treatment have significantly reduced the duration of symptoms without unacceptable risks of side effects?

Systemic antifungal therapy should be considered for all infants with cutaneous candidiasis who have respiratory distress and/or laboratory signs of sepsis such as an elevated leukocyte count with an increase in immature forms or persistent hyperglycemia and glycosuria.[5, 6, 7] Therapy should be given to neonates with cutaneous candidiasis manifesting as burn-like dermatitis, and those with positive blood, urine and/or cerebrospinal fluid cultures for Candida spp.[5, 6, 7] Extensive instrumentation in the delivery room and invasive procedures such as placement of an indwelling catheter in the neonatal period or an altered immune response, particularly neutrophil or macrophage function, may increase the risk for subsequent development of systemic disease. Prompt initiation of antifungal therapy appears to be the most important factor associated with survival of systemic infection.[5, 6, 7] Amphotericin B is the first-line agent for treatment of systemic disease.

Conclusion

In conclusion, generalised cutaneous candidiasis in neonates is a rare disorder that results from a Candida spp infection. Although all affected infants are at risk of disseminated disease, particular vigilance is warranted in preterm infants who are predisposed to development of invasive disease because of their immature, compromised mucocutaneous barrier and systemic host defences. The infant in this report fortunately did not develop systemic signs.

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