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Recognition and Treatment of *Candida albicans* Diaper Dermatitis: An Educational Image and Review

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ABSTRACT

Candida albicans is a common commensal organism found in the gastrointestinal tract and mouth of 40-60% of healthy individuals. However, its pathogenic potential, particularly in the form of diaper dermatitis, is significant in infants. This paper reviews the historical recognition, clinical presentation, and treatment of *Candida albicans* diaper dermatitis. It includes an educational image and emphasizes the importance of differential diagnosis to avoid mismanagement, particularly in distinguishing it from other types of diaper rashes.

Keywords: Candida albicans, Diaper Dermatitis.

INTRODUCTION

Candida albicans is a prevalent microorganism in the human gut, often found in the gastrointestinal tract and oral cavity of 40-60% of healthy individuals. Historically, Candida infections have been recognized for centuries. As early as 1839, Bernhard von Langenbeck (Figure 1) documented the presence of *Candida albicans* causing oro-pharyngeal and esophageal infections in a patient who succumbed to typhoid fever [1].

Figure 1. Bernhard Rudolf Konrad von Langenbeck (November 9, 1810 -September 29, 1887), a German surgeon.

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Candida albicans diaper dermatitis has been reported as early as the 1940s, with Le Coolant (1948) documenting its occurrence in infants [2]. In 1953, Holzel reported eleven cases of Candida diaper rash, suggesting that the condition was more common than previously recognized [3]. Later that year, Bound coined the term "Thrush infection of the napkin area" and found that this infection was especially prevalent among infants under six months old. Bound described 39 cases of *Candida albicans* infection of the napkin area, highlighting the characteristic involvement of the buttocks and inner thighs.

The early skin lesions in Candida diaper dermatitis were described by Bound as small, dull-red areas that coalesced and developed into superficial vesicles, which are diagnostically important. Desquamation of the affected skin areas was frequently observed. Notably, Candida diaper dermatitis often involves the flexural areas, unlike ammonia dermatitis, which spares the folds. Bound also emphasized that seborrheic dermatitis typically appears as isolated lesions at the periphery of a dull red area, without the desquamation characteristic of Candida infection [4].

PATIENTS AND METHODS

We present a case of an infant with an erythematous rash primarily located in the diaper area, including the lower abdomen, perineum, and inguinal folds (Figure 2). The rash was maculopapular, with areas of confluence, and featured notable satellite lesions; small erythematous papules and pustules surrounding the main area of involvement. The skin appeared inflamed, and some areas showed mild scaling or erosions.

RESULTS

A clinical diagnosis of *Candida albicans* diaper dermatitis (also referred to as Candida-associated napkin dermatitis) was made. The presence of satellite lesions, a hallmark feature of Candida infection, distinguished this case from irritant diaper dermatitis, which typically spares the skin folds. Satellite lesions, which are small erythematous papules and pustules separate from the main rash, reinforced the Candida etiology. The patient was treated successfully with topical nystatin.

DISCUSSION

Candida albicans diaper dermatitis is commonly attributed to prolonged exposure to moisture, resulting in a bright red rash with well-defined borders and satellite lesions. Involvement of skin folds, a key diagnostic feature, sets it apart from irritant diaper dermatitis, which generally spares the folds.

Bound observed that oral thrush occurred in less than one-third of the cases, and he also noted an association with maternal vaginal thrush [4].

Beare and colleagues (1968) and Dixon and colleagues (1969) emphasized the importance of clinical diagnosis because *Candida albicans* has can be isolated from the gastrointestinal tract of up to 31 % less than 9 months, and it has been isolated from rashes in napkin area of all types (Ammonia and seborrheic dermatitis, and napkin psoriasis) [5,6].

Dixon and colleagues found *Candida albicans* in 41% of all napkin rashes, and in only one of the 68 normal infants [6].

Nystatin and clotrimazole creams have been used since the 1970s to treat Candida diaper rashes [7, 8]. Proper clinical diagnosis is crucial to avoid the misuse of topical corticosteroids, which are sometimes used for other types of diaper rashes but can increase the susceptibility to fungal infections [9].

Figure 2.

CONCLUSION

Candida albicans diaper dermatitis is a common fungal infection in infants, and its clinical recognition is essential for effective treatment. Early diagnosis, characterized by the presence of satellite lesions and involvement of skin folds, helps differentiate it from other types of diaper rashes. Timely treatment with antifungal agents such as nystatin can effectively resolve the infection and prevent complications.

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The author holds the copyright to the figures included in this paper.

CONFLICT OF INTEREST

None.

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