Congenital candidiasis

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ABSTRACT

Congenital candidiasis (CC) is a rare disease with less than 100 cases being reported in the literature. It presents within six days of life with manifestations ranging from localized skin disease to systemic involvement in the form of respiratory distress, sepsis, and death. We report a neonate who presented with diffuse pustular eruption on erythematous background involving face, trunk, and palms within 24 h after birth. *Candida albicans* was identified in 10% potassium hydroxide (KOH) smear and culture from the pustules. Intravenous fluconazole and topical ketoconazole were given and the condition improved completely in two weeks. CC is rare and needs to be differentiated from other conditions presenting with pustular lesions at birth in order to avoid complications. Early diagnosis and prompt treatment of this condition is important as untreated cases carry a mortality rate of 8-40%.

Key words: Candidiasis, congenital, fluconazole, pustular eruption

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INTRODUCTION

Congenital candidiasis (CC) is rare and usually caused by intrauterine candidial infection and manifests within first 6 days of life.[1] It may be localized involving only skin or generalized resulting in respiratory distress, meningitis, sepsis, and death.[2] A total of 10-35% of the women suffer from candidial vagintis during pregnancy, but less than 1% of them develop candidial chorioamnionitis that can affect the fetus.[3] This is why CC is so rare and only 100 cases have been reported in the literature so far.[4] Herein we report a case of CC occurring within 24 h of birth.

CASE REPORT

A preterm (36 weeks), baby boy weighing 2.5 kg delivered by lower segment caesarean section (LSCS) was brought to the dermatology department with pustular lesions all over the body on the second day of life. The attendant noticed erythema in both groins and over face within few hours after birth, followed by the appearance of pustular lesions on it in next 12-16 h. Scalp, back of trunk, extremities, and palms were involved by the second day. There was no associated fever or systemic symptoms and the APGAR score was normal. Mother was 31-year-old, gravida 6, para 3, live born 2, abortions 3, death 1[G6P3L2A3D1] with gestational hypertension. There was a history of cervical incompetence and cervical encirclage was done at 16th week of pregnancy. Four weeks later, she developed vaginitis and got treated. During delivery by LSCS, obstetrician noticed whitish plaques on the umbilical cord. Cutaneous examination revealed multiple, superficial, small pustules some coalescing to form lakes of pus over an erythematous back ground in groins, scalp, forehead, back, extremities, and palms. [Figures 1 and 2] Skin elsewhere, appendages and mucosae were normal. Systemic examination was normal. Based on the history of vaginitis and cervical suture in the mother, whitish plaques on cord during delivery, pustular lesions on an erythematous background with in 24 h after birth, a clinical diagnosis of CC was considered.

Hemogram revealed leucocytosis (24,900 cells/mm^3). Chest X-ray was normal. KOH mount from the pustular lesions revealed pseudohyphae suggestive of candidiasis [Figure 3]. Culture on sabourauds dextrose agar showed candida species, further confirming the diagnosis [Figure 4]. The baby was given topical 2% ketaconazole cream twice daily along with fluconazole 6 mg/kg intravenously once daily for 3 days as there was leucocytosis. Pustules began to dry by 3rd day and desquamated completely by 5th day [Figure 5]. Oral fluconazole (6 mg/kg/week) and topical

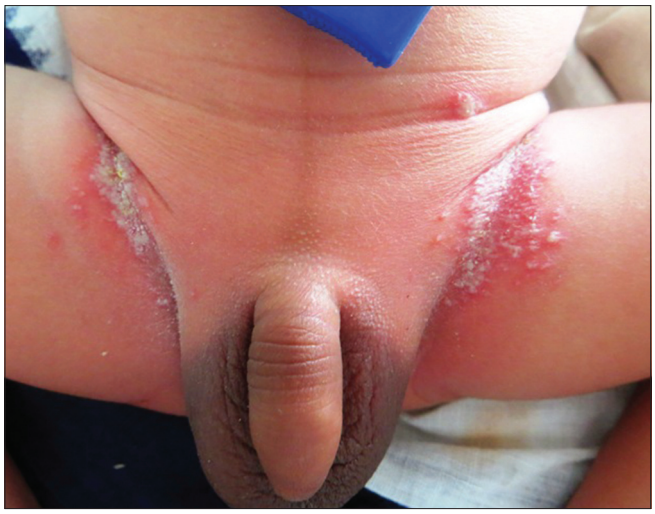

Figure 1: Pustular lesions in groins

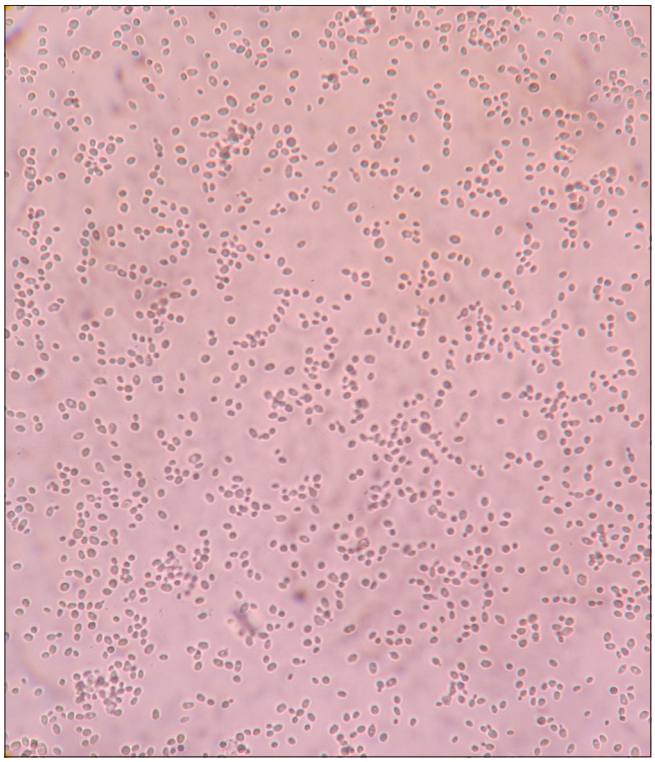

Figure 3: KOH mount showing yeast and pseudohyphae.

ketoconazole were continued for 1 week and there was no recurrence at 3 months of follow-up.

DISCUSSION

CC is a very rare condition which presents at birth or with in first 6-7 days after birth and generally represents maternal chorioamnionitis occurring either from birth canal as an ascending infection or as transplacental infection.[5] The latter is rare and cause extensive visceral involvement with liver being particularly affected. Ascending infection may

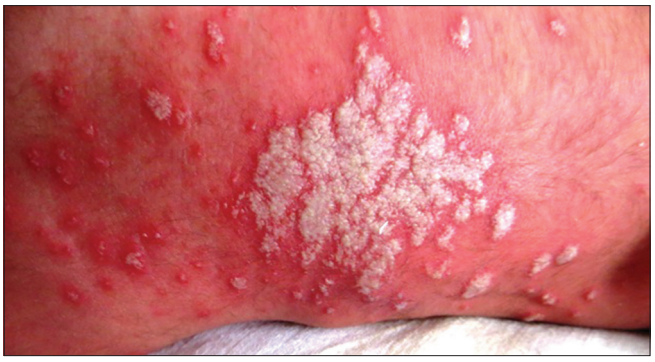

Figure 2: Pustules coalescing to form lakes of pus on the back

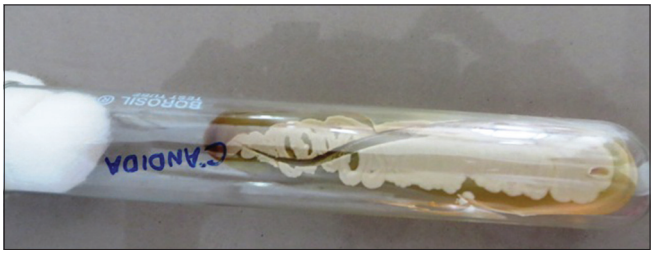

Figure 4: Culture revealing candidal growth

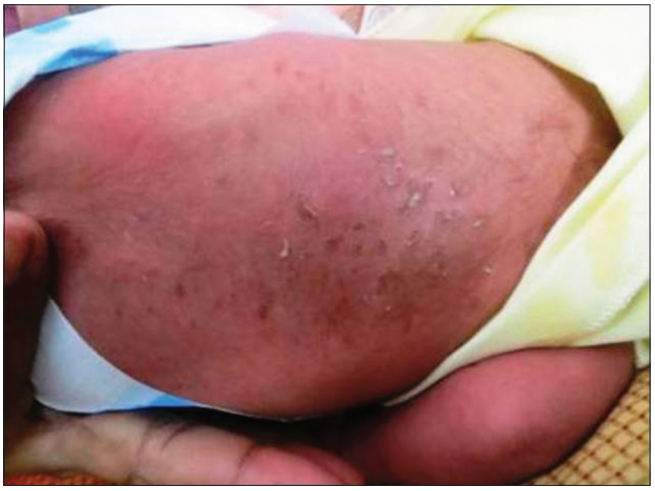

Figure 5: Complete healing with desquamation on 5th day

occur either from subclinical rupture of membranes or even through intact membranes resulting in whitish plaques on the membranes and umbilical cord along with skin lesions, described classically as "white dots on placenta and red dots on baby."[6] Ascending infection was more likely pathogenesis in our case.

Various risk factors like <27 weeks of gestation age, Wt <1000 g, intrauterine device, cervical sutures, invasive procedures, and extensive instrumentation have been reported.[7] The role of maternal steroids or immunodeficiency in the infant is controversial.[8] In the present case, cervical encirclage was done for cervical incompetence by McDonold's method at 16 weeks of pregnancy.

CC manifest at birth or within a few hours of birth as extensive erythematous maculopapular eruption on head, trunk, and extremities that progress to vesicles and pustules on erythematous base in 1-3 days.[9] Bullae may occur rarely.[10] Palmar and plantar pustules are considered as hallmark of the disease, but mucosae and napkin area are spared.[11] Onychia and paronychia may occur and rarely CC may be limited to nails.[12]

Scalded or burn-like appearance of skin lesions may herald systemic involvement.[13] Severe involvement of gastrointestinal and respiratory tract can occur due to aspiration of infected amniotic fluid that culminates in candidial septicemia manifesting as bronchopneumonia, meningitis, arthritis, endocarditis with microabcess in liver, brain, kidneys, or spleen.[14] Features like respiratory distress, leucocytosis with left shift, persistent hyperglycemia, glycosuria, positive cultures from blood, urine, cerebrospinal fluid (CSF), and burn-like skin lesions suggest systemic involvement.[15]

Neonatal candidiasis typically manifests after 6 days of life and differs clinically from CC [Table 1]. CC should be differentiated from various other diseases presenting with pustules in the newborn [Table 2].

Table 1: Comparision of congenital and neonatal candidiasis

	Congenital candidiasis	Neonatal candidiasis
Frequency	Rare	Common
Acquisition	*In utero*	Antepartum/post partum
Cord	May show whitish plaques	Not seen
Onset	<6 days of life	>6 days after birth
Sites	Back, skin folds, palms, soles (oral, napkin area commonly spared)	Oral, napkin area involved
Morphology	Generalized, erythematous macules, papules/pustules on an erythematous base	Deep beefy red color with moist appearance, scalloped outline, satellite pustules

Table 2: Causes of neonatal pustular disorders

Causes of neonatal pustular disorders
Infections
Bacterial: *Staphylococcus aureus, Streptococcus pyogenes, Hemophilus influenzae, Escherichia coli, Klebsiella pneumoniae, Pseudomonas*, listeria, Syphilis
Viral: Herpes simplex virus, Varicella-zoster, Cytomegalovirus, AIDS
Fungal: Candida, Pityrosporum
Parasitic: Scabies
Reactive
Miliaria, Transient neonatal pustular melanosis, Erythema toxicum neonatarum, Eosinophilic folliculitis, Acne, Acropustulosis
Infiltrate miscellaneous
Histiocytosis, Incontinentia pigmenti

AIDS: Acquired immunodeficiency syndrome

Diagnosis was established by KOH mount of skin lesions showing budding yeasts and pseudohyphae and culture revealing candidial growth. Blood, urine, and CSF cultures should be obtained to rule out systemic involvement if there is clinical suspicion.

Treatment includes topical and systemic antifungal therapy.[16] Amphotercin B is the first line agent given in doses of 0.5-1 mg/kg/day and liposomal amphotericin B is less toxic and preferred if there is preexisting renal insufficiency.[17] Fluconazole at 6-12 mg/kg/day dose is effective alternative if organism is susceptible. Our patient had shown excellent recovery with fluconazole. Topical therapy is given till the resolution of skin lesions and systemic therapy continued for minimum of 21-28 days if systemic involvement is present.

CONCLUSION

CC is very rare and needs to be differentiated from various diseases presenting with generalized maculopapular or pustular lesions at birth in order to avoid complications. Early recognition and prompt diagnosis will help in the successful management of the newborn.

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