

## CASE REPORTS

### CONGENITAL CANDIDIASIS

Shrabani Mandal, Mukut Banerjee, Asim Kumar Mallick  
Department of Pediatrics, NRS Medical College and Hospital, Kolkata, India

#### ABSTRACT

Congenital candidiasis is an extremely 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 with hepatosplenomegaly, and death. Intrauterine infection by candida may give rise to this condition and it differs from neonatal candidiasis, which manifests as thrush or diaper dermatitis. We report a neonate who presented with diffuse pustular eruption on erythematous background involving head, face, trunk, and palms at birth. *Candida albicans* was identified on blood culture and budding yeast cells were seen on 10% potassium hydroxide (KOH) preparation on the pus drained from the pustules. Intravenous fluconazole and topical ketoconazole were given and the condition improved completely in two weeks.

#### ARTICLE HISTORY

Received 25 September 2018  
Accepted 2 November 2018

#### KEYWORDS

cutaneous candidiasis,  
congenital candida

#### Introduction

Congenital candidiasis is rare and usually caused by intrauterine candidial infection and manifests within first 6 days of life.<sup>1</sup> It may be localized involving only skin or generalized resulting in respiratory distress, meningitis, sepsis, and death.<sup>2</sup> A total of 10-35% of the women suffer from candidial vaginitis during pregnancy, but less than 1% of them develop candidial chorioamnionitis that can affect the fetus.<sup>3</sup> That is why congenital candidiasis is so rare and only 100 cases have been reported in the literature so far.<sup>3</sup> We report a newborn with congenital candidiasis.

#### Case Report

A late preterm boy born at 36 weeks of gestation, weighing 2.75 kg at birth was born to a 25 years old primigravida mother. He was delivered by normal vaginal delivery and subsequently referred to our Sick Newborn Care Unit (SNCU) with pustular lesions on erythematous background all over the body. Mother noticed erythema over face, neck and upper trunk within few hours after birth, followed by the appearance of pustular lesions on it in next 12-16 hours (Figure 1). Scalp, back of trunk; extremities were involved by the second day. On examination many tiny erythematous finely scaly patches with satellite maculo-papular lesions were noticed on the face, neck, axilla, chest. There was no associated fever. Systemic examination was normal. On investigations, hemoglobin was 15.6 gm/dl, white blood cell (WBC) count was 15,000/cumm (45% polymorphonuclear cells, 30% lymphocytes), platelet count was 1,30,000/cumm and C-reactive protein

2.6 mg/l and blood culture was positive for candida albicans. Chest radiograph and ultrasound (USG) of the brain was normal. USG abdomen was normal. Urine culture grew candida albicans. Echocardiography was not done. Liver and renal function tests were normal. Scrapings of the skin lesion showed budding yeast. Fluconazole 12 mg/kg loading followed by 6 mg/kg IV was given for 14 days to which the child responded. Mother was not screened for vaginal candidiasis.

#### Discussion

Congenital candidiasis is a very rare condition which presents at birth or within first 6-7 days after birth and generally represents maternal chorioamnionitis. It results either from birth canal as an ascending infection or as transplacental infection.<sup>4</sup> The latter is rare and cause extensive visceral involvement mainly liver. Ascending infection may occur 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".<sup>5</sup> Ascending infection was more likely pathogenesis in our patient as the child was non-toxic, had normal liver function tests and had skin involvement predominantly with candida albicans growing in the blood and urine. Various risk factors like <27 weeks of gestation age, birth weight <1000 gm, intrauterine device, cervical sutures, invasive procedures, and extensive instrumentation have been reported.<sup>6</sup> The role of maternal steroids or immunodeficiency in the infant is controversial. Neonatal candidiasis typically manifests after 6 days of life and differs clinically from congenital candidiasis.

Congenital candidiasis manifests 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. Bullae may occur rarely. Palmar

**CONTACT** Shrabani Mandal

**Email:** [drshrabanimandal@gmail.com](mailto:drshrabanimandal@gmail.com)

**Address for Correspondence:** Shrabani Mandal,  
Department of Pediatrics, NRS Medical College and  
Hospital, Kolkata 14, India.

©2019 Pediatric Oncall

and plantar pustules are considered as hallmark of the disease, but mucosa and napkin area are spared. Onychia and paronychia may occur and rarely it may be limited to nails.<sup>7</sup> Scalded or burn-like appearance of skin lesions may herald systemic involvement.<sup>8</sup> 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 microabscesses in liver, brain, kidneys, or spleen. 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.<sup>8</sup>

Although no well-powered randomized controlled trials exist to guide length and type of therapy, systemic antifungal therapy is recommended in infants. Topical antifungal therapy is the treatment of choice for congenital cutaneous candidiasis in full term infants. Congenital candidiasis in preterm infants can progress to systemic disease, and therefore systemic therapy is warranted.<sup>9</sup> Antifungal therapy should be targeted based on susceptibility testing.

#### **Conclusion**

Congenital candidiasis 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 condition.

#### **Compliance with Ethical Standards**

**Funding:** None

**Conflict of Interest:** None

#### **References :**

1. Melville C, Kempley S, Graham J, Berry CL. Early onset systemic Candida infection in extremely preterm neonates. *Eur J Pediatr*. 1996; 155:904–6.
2. Khambadkone SM, Dixit KM, Divekar A, Joshi SM, Irani SF, Desai M. Congenital candidiasis. *Indian Pediatr*. 1996;33:512–6.
3. Darmstadt GL, Dinulos JG, Miller Z. Congenital cutaneous candidiasis: Clinical presentation, pathogenesis, and management guidelines. *Pediatrics*. 2000;105:438–44.
4. Blanc WA. Pathways of fetal and early neonatal infection: Viral placentitis, bacterial and fungal chorioamnionitis. *J Pediatr*. 1961;59:473–96.
5. Diana A, Epiney M, Ecoffey M, Pfister RE. "White dots on the placenta and red dots on the baby": Congenital cutaneous candidiasis--a rare disease of the neonate. *Acta Paediatr*. 2004; 93:996–9.
6. Benjamin DK, Stoll BJ, Gantz MG, et al. Neonatal candidiasis: epidemiology, risk factors and clinical judgement. *Pediatrics* 2010; 126(4):e865-e873.
7. Jagtap SA, Saple PP, Dhaliat SB. Congenital cutaneous candidiasis: A rare and unpredictable disease. *Indian J Dermatol* 2011;56:92-3.
8. Reiss E, Morisson CJ. Nonculture methods for diagnosis of disseminated candidiasis. *Clin Microbiol Rev* 1993;6:311-323.
9. Ericson J, Smith RB, Daniel K, Benjamin Jr. *Candida Infection* In: Kliegman RM, Stanton BMD, St. Geme J, Schor N, Behrman RE, eds. *Nelson Textbook of Pediatrics* 20th ed. Philadelphia. Elsevier Saunders. 2016: 1515-1518.