


# *Globicatella sanguinis* Infection in a Neonate: A Rare Case Report

Narayan Santuka<sup>1</sup>, Snehamayee Nayak<sup>2</sup> 

Received on: 03 November 2022; Accepted on: 23 December 2022; Published on: 30 June 2023

## ABSTRACT

*Globicatella sanguinis* (*G. sanguinis*) is a gram-positive cocci resembling viridans streptococci. Hospital-acquired infection (HAI) with *G. sanguinis* has been very rarely reported. Here, we are reporting a rare case of HAI by *G. sanguinis* in a neonate who presented with prolonged hypoglycemia.

**Keywords:** *Globicatella sanguinis*, Neonate, Sepsis.

*Pediatric Infectious Disease* (2023): 10.5005/jp-journals-10081-1380

## BACKGROUND

*G. sanguinis* causes various infections including meningitis<sup>1</sup> in children and adults but isolation in neonates is rare. Here, we report a rare case of isolation of *G. sanguinis* from the blood culture of a neonate with suspected septicemia and is the second such case ever to be reported from neonates.<sup>2</sup>

## CASE DESCRIPTION

A term fifth-order male large for gestational age (LGA) baby delivered vaginally was admitted to special newborn care unit of a local hospital on D1 of life with a history of delayed cry after birth and convulsion after 6 hours of birth. At the time of admission, he had hypoglycemia with convulsions which responded to 10% dextrose injection. He was treated with oxygen, intravenous (IV) fluid, and ampicillin was given empirically. His initial sepsis screen was negative with normal serum electrolyte, urea, and creatinine. Initial blood culture revealed no growth. He had repeated convulsion on D2 and D3 of life with persistent drowsiness for which he was referred to our hospital on D4 of life. After admission to our hospital, considering the possibility of coexisting sepsis, the baby was treated with cefotaxime and amikacin along with phenobarbitone and phenytoin for convulsions and IV fluids. Due to repeated hypoglycemic episodes, he was kept on IV fluid with higher glucose infusion rate (GIR). Orogastric feeding was started but hypoglycemia persisted. Critical sample serum insulin level was 12.45 mIU/mL. Inj. hydrocortisone was given in view of persistent hypoglycemia. Cerebrospinal fluid study was done and was within normal limits. As the condition of the child was not improving, antibiotic was upgraded to linezolid as per our neonatal intensive care unit (NICU) culture trends, and repeat sepsis screen was done suspecting sepsis as a cause for hypoglycemia and it came out to be positive. Repeat blood culture with 1 mL blood in a blood culture bottle was sent and processed using automated blood culture system (BACT/ALERT and VITEK 2, bioMérieux), grew *G. sanguinis*, which was sensitive to ampicillin, doxycycline, tetracycline, linezolid, and vancomycin. The blood sugar started improving and GIR was gradually reduced and subsequently stopped with the continuation of breastfeeding. Linezolid which was started empirically before sending investigations continued for 14 days as the baby was

<sup>1,2</sup>Department of Paediatrics, SCB Medical College & Hospital and Sardar Vallabhbhai Patel Post Graduate Institute of Paediatrics, Cuttack, Odisha, India

**Corresponding Author:** Snehamayee Nayak, Department of Paediatrics, SCB Medical College & Hospital and Sardar Vallabhbhai Patel Post Graduate Institute of Paediatrics, Cuttack, Odisha, India, Phone: +91 7712572999, e-mail: snehamayee.nayak@gmail.com

**How to cite this article:** Santuka N, Nayak S. *Globicatella sanguinis* Infection in a Neonate: A Rare Case Report. *Pediatr Inf Dis* 2023;5(2):58–59.

**Source of support:** Nil

**Conflict of interest:** None

**Patient consent statement:** The author(s) have obtained written informed consent from the patient's parents/legal guardians for publication of the case report details and related images.

improving and the culture reports were supportive of it. The baby was discharged as a case of LGA, perinatal asphyxia with transient hyperinsulinism with hospital-acquired sepsis by *G. sanguinis*.

## DISCUSSION

In 1992, on the basis of differences in ecology and 16S rRNA sequence, Collins et al.<sup>3</sup> separated all human strains of *Streptococcus uberis* into a new genus and species, *G. sanguinis*. *Globicatella* grow as small, α-hemolytic colonies of gram-positive cocci in chains. Certain characteristics can be helpful in differentiating *Globicatella* spp. and viridans group streptococci. Distinguishing *G. sanguinis* from viridans group streptococci carries important therapeutic implications because *Globicatella* typically demonstrates elevated minimum inhibitory concentrations (MICs) to ceftriaxone and low MICs to penicillin, a pattern considered unusual for most viridans group streptococci.<sup>4</sup> Isolation of these organisms in NICU indicates a matter of utmost concern considering the difficulty in isolating and identifying the organism and also indicating the expanding arena of organisms causing neonatal sepsis.

Emphasis also needs to be put on the handling and holistic care of the newborn instead of just focusing on the clinical condition. In our case, measures of asepsis at the primary care center and during transport become vital. Multiple needle punctures for investigations and frequent change of IV lines also predispose to

development of sepsis. The importance of stepwise and proper handwashing cannot be overemphasized.

### MESSAGE

With increasing drug-resistant strains of common organisms and isolation of rare organisms, it becomes more important than ever to focus on strict asepsis and antibiotic rationality. Holistic care of the newborn and not just the clinical condition must be our goal. *G. sanguinis* is rarely seen in neonatal sepsis and thus, must be reported.

### ORCID

Snehamayee Nayak  <https://orcid.org/0000-0003-1436-8204>

### REFERENCES

1. Héry-Arnaud G, Doloy A, Ansart S, et al. *Globicatella sanguinis* meningitis associated with human carriage. *J Clin Microbiol* 2010;48(4):1491–1493. DOI: 10.1128/JCM.01299-09
2. Devi U, Bora R, Malik V, et al. Isolation of *globicatella sanguinis* from cerebrospinal fluid of a neonate. *Int J Biol Med Res* 2016;7:5760–5762.
3. Collins MD, Aguirre M, Facklam RR, et al. *Globicatella sanguis* gen. nov., sp. nov., a new gram-positive catalase-negative bacterium from human sources. *J Appl Bacteriol* 1992;73(5):433–437. DOI: 10.1111/j.1365-2672.1992.tb05000.x
4. Facklam RR. Newly described, difficult-to-identify, catalase-negative, gram-positive cocci. *Clin Microbiol Newslett* 2001;23(1):1–7. DOI: 10.1016/s0196-4399(01)80010-6