

A Case of Neonatal Sepsis with Pneumonia Due to *CedeceaLapagei*.

Dr. AukifaKhamimSabibahul Islam¹, Dr. Reeta Bora², Dr. Rina Ahmed³,
Dr. Amrit Kumar Borah⁴, Dr. Sutharson Ramasamy⁵.

¹(Assistant Professor, Department Of Paediatrics, Assam Medical College And Hospital, India)

² (Associate professor, Department Of Paediatricss, Assam Medical College And Hospital, India)

³ (Professor, Department Of Obstetrics And Gynaecology, Assam Medical College And Hospital, India)

⁴(Assistant Professor, Department Of Microbiology, Assam Medical College And Hospital, India)

⁵(Post Graduatetrainee, Department Of Paediatrics, Assam Medical College And Hospital, India)

Abstract

Background:A wide spectrum of organisms is responsible for neonatal septicaemia and is different in developed and developing countries. **CASE CHARACTERISTICS:** A single female term baby of birth weight of 2.2kg, small for gestational age (SGA) born to primigravida mother with meconium stained amniotic fluid by assisted vaginal delivery presented with respiratory distress since birth. Sepsis screen was positive and blood culture showed *CedeceaLapagei*. Chest X-ray showed features of Pneumonia. **INTERVENTION:** Based on this culture sensitivity report Inj. Ciprofloxacin was continued for 14days and Inj. amikacin was stopped at day 7. **MESSAGE:**Till date, *CedeceaLapagei* is an uncommon organism of Neonatal sepsis.

Keywords: *CedeceaLapagei*, Neonatalsepsis, Pneumonia.

I. Introduction

Septicemia is one of the leading cause of morbidity and mortality of neonates in the developing countries. According to National Neonatal Perinatal Database (NNPD) 2002-3, the incidence of neonatal septicaemia in India has been reported to be 30/1000 livebirths and was one of the commonest causes of neonatal mortality contributing to 18.6% of intramural death[1]. The spectrum of organisms responsible for septicaemia is subject to geographical alteration. Many of the organisms have developed resistance to commonly used antibiotics. The bacteriological profile is different in developed and developing countries. In developed countries, group B streptococci and coagulase negative staphylococci are the most common aetiological agents. However, in the developing countries group B Streptococci is rare and the bacteriological spectrum is completely different. *KlebsiellaPneumoniae*, *E.Coli*, *Acinetobacter* and *Staphylococcus* are common organisms in developing countries.

Here we report a case of early onset neonatal sepsis due to *C.Lapagei* from a tertiary level care neonatal unit from North East India.

II. Case Report

A single female baby of 38 week of gestational age and birthweight of 2.2kg, small for gestational age (SGA) was born out of meconium stained amniotic fluid by assisted vaginal delivery. The baby was born to a primigravida mother, aged 20 years with duration of labour of 12 hours and duration of rupture of membrane of 4 hours. There was antepartum eclampsia and she received two doses of Magnesium Sulphate. The amniotic fluid was meconium stained. **a**

The baby cried at birth. Baby developed respiratory distress immediately after birth with a Downe's score of 3/10. The respiratory rate was 82/min and had mild subcostal retraction. The baby was transferred to NICU and managed with headbox oxygen and IV fluid with 10% dextrose. Empirically, antibiotic with ciprofloxacin and amikacin by intravenous route was started (first line antibiotic given in our NICU) after taking sample for blood culture. A chest X-ray and sepsis screen was done. Gavage feeding with EBM was started on day 2 when the retraction subsided and respiratory rate came down to 78/min. Gradually on day 3 respiratory

rate came down to 69/min and spoon feeding with EBM was given. Respiratory distress settled by day 4 and baby was put on breast feeding.

The sepsis screen came out to be positive. Total count was 14,400/cu mm, ANC was 9700/L and miro ESR was 9 AEFH. Toxic granules were present. CRP was negative. The chest Xray showed evidence of Pneumonia. The blood culture report showed presence of Cedecea Lapagei after overnight aerobic incubation at 37°C by Versa Trek blood and body fluid culture system. The organism was sensitive to Ciprofloxacin and Imipenem and resistant to Amoxyclav, Ceftazidime, Ceftriaxone, Cotrimoxazole, Gentamycin, Cefurixime and Piperacillin/Tezobactam. Based on this culture sensitivity report Inj. Ciprofloxacin was continued for 14 days and Inj. amikacin was stopped at day 7. CSF analysis was normal. The mother's vaginal swab was taken and sent for culture sensitivity. No growth was seen in the vaginal swab.

Jaundice was detected in the baby on day 7 of life with maximum Total Seumbilirubin (TSB) of 18.2mg/dl. Baby was treated by phototherapy for 48 hours. Min TSB was 11.8mg/dl on day 9 of life. Both mother's and baby's blood group was O positive, Glucose 6 phosphate dehydrogenase was within normal range. Hence the cause of jaundice was idiopathic.

Baby was discharged on Day of life and diagnosis of culture proven sepsis with congenital Pneumonia with Neonatal Jaundice was made.

III. Discussion

Cedecea bacteria were first discovered in 1977 by a group of scientists at the CDC (Centre for Disease Control) and were named as "Enteric Group 15." In 1980, the genus named Cedecea was proposed by Patrick A.D. Grimont and Francine Grimont [2]. The genus Cedecea belongs to the family of Enterobacteriaceae. The genus is phenotypically distinct from other genera in the family Enterobacteriaceae [3]. Cedecea bacteria are gram negative bacillus, motile, nonencapsulated and nonspore-forming., [4,5]. Strains of Cedecea resembles strains of Serratia because both are lipase positive and resistant to colistin and cephalothin. However Cedecea strains do not hydrolyze gelatin or DNA [5-8]. Six species of Cedecea have been identified. Currently three have been named as C. davisae, C. lapagei and C. neteri while three remain unnamed [9]. Very few cases have been reported where Cedecea species have been isolated from clinical samples as pathogens., [6,8,10]. To the best of our knowledge no neonatal case with cedecea infection has been reported.

This was the first documented isolate of Cedecea Lapagei in newborn in our NICU. Bacteremia, ulcers, abscess, wound and ophthalmic infections has been reported to be caused by C. davisae and C. neteri; and Pneumonia has been reported to be caused by C. lapagei., [6,10,11,12]. But report of neonatal sepsis or congenital pneumonia due to C. Lapagei was not found on literature search.

References

- [1]. Report of the National Neonatal Perinatal Database. National neonatology Forum, India, 2002-2003.
- [2]. Grimont P.A.D., Grimont F, Farmer III J.J and Asbury M A. Cedeceadavisae gen. nov. sp. Nov. and Cedecealapageisp. nov. new Enterobacteriaceae from clinical specimens. International Journal of Systematic Bacteriology, 1981. 31: 317-326.
- [3]. Janda J, Michael, Sharon L. Abbott. The Enterobacteria (2nd ed.) Washington D.C.: ASM Press. 2006. p.411. ISBN 978-1-55581-342-0.
- [4]. Mawardi H, Pavlakis M, Mandelbrot D, Woo S. B. Sirolimus oral ulcer with Cedeceadavisae superinfection. Transpl Infect Dis. 2010, 12, 446-450.
- [5]. Abate G, Qureshi S and Mazumder S A. Cedeceadavisae bacteremia in a neutropenic patient with acute myeloid leukemia. Journal of Infections 2011, 63, 83-85.
- [6]. Farmer III J J, Seth N K, Hudzinski J A, Rose H D, Asbury M F. Bacteremia due to Cedeceaneterisp. nov. Journal of Clinical Microbiology, Oct. 1982, p.775-778.
- [7]. Perkins S R, Beckett T A, Bump C M. Cedeceadvisae bacteremia. Journal of Clinical Microbiology, 1986, 24, 675-676.
- [8]. Dalamaga M, Karmaniolas K, Arsenis G, Pantelaki M, Daskalopoulou K, Papaavid E and Migdalis I. Cedecealapagei bacteremia following cement-related chemical burn injury. Burns 2008, 34, 1205-1207.
- [9]. Dalamaga M and Vrioni G. Cedecea. Molecular detection of human bacterial pathogens. 2011, 817-825.
- [10]. Dalamaga M, Pantelaki M, Karmaniolas K, Matekavits A, Daskalopoulou L. Leg ulcer and bacteremia due to Cedeceadavisae. Eur J Dermatol 2008; 18(2):204-5.
- [11]. Yetkin G, Ay S, Katyabas U, Gedik E, Gucluer N, Caliskan A. Apneumonia case caused by Cedecealapagei. MikrobiolBul 2008; 42(4): 681-4.
- [12]. Harun Agca, Merlin Bozkurt. A Pneumonia Case Caused By Cedecea Lapagei. J Clin Anal Med 2014, 5(2): 147-8.