Case Report

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Stenotrophomonas maltophilia: a rare cause of early onset neonatal sepsis

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ABSTRACT

Stenotrophomonas maltophilia is a rare cause of early onset neonatal sepsis. The extensive resistance of this organism to several antibiotics leaves fewer options for antimicrobial therapy. A few cases were reported in neonates. We present a case of early onset sepsis in a neonate caused by Stenotrophomonas maltophilia. The newborn was born preterm and presented with respiratory distress within two hours of birth. Stenotrophomonas maltophilia is a rare cause early onset neonatal sepsis with significant morbidity and mortality.

Keywords: Stenotrophomonas maltophilia, neonatal sepsis

INTRODUCTION

Stenotrophomonas maltophilia (S. maltophilia) is a gram-negative bacillus previously belonged to Pseudomonas and subsequently Xanthomonas genus. In 1993, a new genus Stenotrophomonas was proposed resulting in the most recent reclassification of this bacterium. S. maltophilia is an aerobic, multidrug resistant non-fermentative, gram negative bacillus.

This organism was once regarded as an organism of low virulence, has evolved as a significant opportunistic pathogen that has emerged as a cause of nosocomially acquired infection with significant mortality and morbidity, especially in severely immunocompromised and debilitated individuals. S. maltophilia causes a variety of infections including respiratory tract infections (pneumonia), bloodstream infections (BSIs), bone and joint infections, urinary tract infections, endocarditis and meningitis. A number of outbreaks of S. maltophilia were reported in adult intensive care patients and some in neonates. This organism is naturally resistant to cephalosporins and carbapenems, which can colonize

different sites and may be responsible for serious infections for which treatment is a real challenge. Here, we report a case of early onset neonatal sepsis caused by *S. maltophilia*.

CASE REPORT

A single male baby weighing 1700 gram was delivered at 35 weeks gestational age through spontaneous vaginal delivery to a 21-year-old primigravida mother with history of leaking per vagina for 20 hours. Antenatal history was uneventful. Baby had a delayed cry at birth with APGAR score of 3 and 7 at 1 and 5 minutes, respectively. Baby was brought to our hospital at two hours of life with respiratory distress. At admission, baby had Downe score of 4 for which he was connected to bubble CPAP and IV fluid was started. Arterial blood gas revealed mild metabolic acidosis. Blood for sepsis screen and culture and sensitivity was sent and IV gentamicin was started. Sepsis screen revealed C- reactive protein of 12 µg/dl and total leukocyte count of 4000/cmm. Blood culture isolated Stenotrophomonas maltophilia; which was sensitive to levofloxacin and meropenam and was

resistant to cotrimoxazole, cephalosporins, aminoglycosides, tigecyclin, and colistin. Injection (Inj) gentamycin was stopped and Inj. levofloxacin and meropenam were started. CSF analysis was normal. On day 4, baby developed recurrent episodes of apnea for which he was intubated and connected to mechanical ventilator. Second blood culture sent on day 4 of illness isolated Klebsiella pneumonia. Inj. colisin was added. On day 7, baby developed petechiae and mucosal bleeding and the capillary filling time was prolonged. Fresh frozen plasma was administered, and ionotropic support was given along with the continuation of antibiotics. Baby deteriorated rapidly and died on day 7 of life.

DISCUSSION

S. maltophilia was first isolated in 1943 and was named as Bacterium bookeri. Later, it was classified as Pseudomonas, then Xanthomonas and finally Stenotrophomonas in 1993. 6.7 The first case of neonatal infection due to S. maltophilia was reported in 1984. 8

Though *S. maltophilia* is rarely isolated from neonates with early onset neonatal sepsis, the great concern is its multi drug resistance pattern to commonly used antibiotics such as cephalosporins, aminoglycosides, and carbapenems. Although the organism is reported to be sensitive to cotrimoxazole, there are evidences of increased in-vitro resistance.⁹

Flouroquinilones, in particular Levofloxacin are potential alternatives to cotrimoxazole. In the present case, mother had prolonged rupture of membranes for 20 hours, baby was born premature and had symptoms of respiratory distress within first 2 hours of life. Two organisms, *S maltophilia* and *Klebsiella pneumonia* were isolated. It is possible that mother might have colonized *S maltophilia* and passed to the preterm baby. *Klebsiella* may have been acquired in hospital. The combination of infection in preterm might be responsible for rapid deterioration and poor response to therapy.

Most of the cases of *S. maltophilia* sepsis in neonate were reported as late onset sepsis except for two cases reported by Viswanathan et al.¹¹⁻¹³ The present case was reported to highlight the emergence of *S. maltophilia* as a cause of early onset neonatal sepsis with significant morbidity and mortality, often in preterm neonates and in presence of co-infection. Therefore, it is essential for neonatologists and microbiologists to be aware of this infection.

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