



Case Report

Sphingomonas Paucimobilis Septicemia in a Paediatric Patient - A Rare Case Report

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ABSTRACT

Sphingomonas paucimobilis is an aerobic, gram negative, non fermentative, motile opportunistic pathogen that rarely causes infection in humans. *Sphingomonas paucimobilis* can cause nosocomial and community-acquired infection. Here we report a case of 7 year old girl who was suffering from Epilepsy & was on ventilator. On the 8th day of admission she showed signs of sepsis. *Sphingomonas paucimobilis* was isolated from blood bactec and patient responded well to the treatment. *Sphingomonas paucimobilis* should be treated as an emerging pathogen and not just a contaminant of hospital setup.

Key words: *Sphingomonas paucimobilis*, *S. paucimobilis* septicaemia, paediatric age group.

INTRODUCTION

Sphingomonas paucimobilis is an aerobic, gram negative, non sporing, non fermentative, oxidase positive, catalase positive, motile opportunistic pathogen that rarely causes infection in humans. Bacteria belonging to genus *Sphingomonas* are ubiquitous in soil and water.^[1] This microorganism has been isolated from the hospital water systems, mechanical ventilators, soil, distilled water, nebulizers, and multiple equipments used in medical care.^[2] *S. paucimobilis* can cause nosocomial and community-acquired infection.^[3] It has been implicated as a causative agent of infections in immunocompromised patients and healthcare-associated infections. Here we present a case of *Sphingomonas* bacteremia

in a paediatric patient who was suffering from Status epilepticus.

CASE REPORT

7 yr old girl was brought to emergency department with the history of 2 episodes of seizures and was found unconscious. She was hospitalised with the presumptive diagnosis of epilepsy. She was admitted in PICU where she was put on the ventilator. All the routine investigations were done. Her EEG showed PLEDS (Periodic lateralized epilepticform discharges). She was diagnosed as a case of super refractory epilepsy.

She was started on IV Phenytoin (500mg), IV Gardenal (200mg), IV Valparin (100mg), IV Thiopentene (1g), IV Midaz (1mg/ml), IV MgSO₄ (50%), IV

Ketamine, Tab Topiramate. On day 8 of the admission she had 4 episodes of fever spikes (100, 102, 101, 102). Blood bactec was sent for culture and sensitivity. Routine investigations like haemogram & renal profile were sent. Blood investigation showed Hb 7.7g/dl, TLC 17200/cumm, platelet count 5.60lakh/cumm. DLC showed 75% of neutrophils, 11% lymphocytes and 6% band cells. Smear showed evidence of sepsis.

Bactec beeped at 2nd day of incubation. Sub-cultures were done on Blood agar and MacConkey agar. On Blood agar deep yellow, smooth, convex, raised and non haemolytic small colonies were observed after incubation for 24 hours at 37°C. No growth was observed on MacConkey agar. Gram stain showed gram negative bacilli and motility test showed sluggishly motile bacilli. The organism was positive for Catalase, Oxidase, and Esculin hydrolysis and negative for Indole, Citrate, and Nitrate reduction. It showed K/K reaction with no gas and H₂S production on TSI agar slant. Identification was done using Vitek GNB card (BioMerieux, France). The isolate was identified as *S. paucimobilis*. Antibiotic susceptibility test was also performed with Vitek 2 (BioMerieux, France) system and the strain was found to be susceptible to Amikacin, Piperacillin - Tazobactam, Ceftriaxone, Cefepime, Imipenem, Meropenem, Tigecycline, Amox-clavulanic acid and resistant to Cefuroxime and Gentamycin. To rule out contamination we asked for the second sample. From the repeat sample we reisolated *S. paucimobilis*. A 15-day treatment of IV Piperacillin – Tazobactam (100mg/kg/dose TDS) and IV Vancomycin (60mg/kg/dose) was initiated. She responded well to the treatment and discharged.

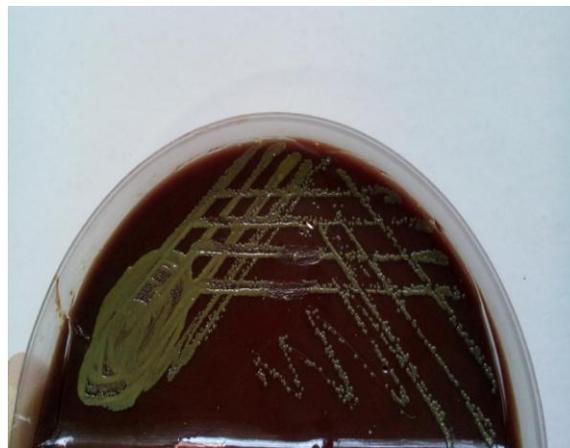


Fig 1: Yellow coloured colonies on chocolate agar.

DISCUSSION

S. paucimobilis is a yellow-pigmented, aerobic, gram negative bacillus, non fermentative and is non spore forming which shows sluggish motility and hence named *paucimobilis*. It produces yellow- or off-white-pigmented colonies on blood agar, named it as *Pseudomonas paucimobilis* to differentiate from *Xanthomonas* on basis of various phenotypic characters later reclassified as *S. Paucimobilis*.^[1,4]

The bacteria is widely found in natural environment, especially in water and soil.^[4,5] There are cases in which this microorganism causes epidemics in hospitals.^[2] In such patients, the cause usually cannot be determined and are considered to have endogenous origin.^[5] However, *S. paucimobilis* may be found in tap water, distilled water, nebulizer, respirator, dialysis liquids and other equipment in hospitals and lead to nosocomial infection.^[5-7] Most of the cases are reported in hospital setup. *S. paucimobilis* was shown to be an infective agent in cases of sepsis, peritonitis & catheter-related infections.

Generally the nosocomial infections are reported to originate from indwelling devices or contaminated hospital environment.^[4,5] Community acquired infections by *S. paucimobilis* are also

reported, even though lesser in number. *S. paucimobilis* isolates have been recovered from multiple sources of hospital environments. Although some case reports or case series of *S. paucimobilis* infection have been published for adult patients, the clinical features of *S. paucimobilis* infections are still less well known especially in paediatric settings.

Antibiotic susceptibility varies from study to study.^[2-6] The organism responds well to Fluoroquinolones, Beta-lactam/ Beta lactamase inhibitor combination and Carbapenems but are resistant to Penicillins and first-generation Cephalosporins.

CONCLUSION

S. paucimobilis can cause infections in healthy as well as immunocompromised individuals. Every year cases of *S. paucimobilis* are reported with increasing frequency. Although it is an organism of low clinical virulence, infection caused by *S. paucimobilis* can lead to septic shock. Hence it should be treated as an emerging pathogen and not just a contaminant of hospital setup. Moreover, its mode of spread and source of infection in the community should be studied extensively.

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