

# Arcanobacterium Hemolyticum: An Usual Fatal Case

**Keywords:** *Arcanobacterium hemolyticum*; Cerebrovascular accident; Pneumonitis; Meropenem, Levofloxacin, Metronidazole; Penicillin-G

## Case Report

A 68-year old male farmer was admitted to the MICU ward on January 2016 at Bapuji Hospital attached to JJM Medical College. The chief complaints were cough with expectoration since three days, fever for one day, altered sensorium and loss of consciousness from previous night, sudden onset of breathlessness since that morning and one episode of seizure while shifting the patient into the ambulance. On central nervous system examination, the patient was unconscious but both the pupils were reacting to light. Muscle power and tone were reduced on the right side. The bilateral plantar response was extensor. On cardiovascular system examination, pulse rate was increased but blood pressure was normal. On respiratory system examination, air entry was equal on both sides. Bilateral crepitations were heard and oxygen saturation was 98% with manual oxygen supply. A provisional diagnosis of cerebrovascular accident (CVA) with aspiration pneumonitis was made. The patient was put on IV fluids, manual oxygen supply and injectable antibiotics consisting of meropenem, levofloxacin, metronidazole, and ceftriaxone along with antipyretics. Within an hour, due to fluctuating oxygen saturation, the patient was intubated with mechanical ventilation support with the consent of his relatives. Neutrophil count, total RBC count was raised but platelet count was decreased, activated partial thromboplastin, liver function test and serum potassium levels were raised. Serological tests for Dengue (NS1, IgM, IgG), Malaria (Rapid) and Rickettsial diseases (Weil-Felix) were negative. Blood, urine and suction tip were sent to Microbiology laboratory for culture. Blood and urine cultures yielded no growth but the culture of suction tip on human blood agar yielded small, beta-hemolytic colonies that were catalase negative and non-motile. The organism was identified as *Arcanobacterium hemolyticum* by using Phoenix 100 (BD) system and antibiogram obtained from the same instrument. The isolate was susceptible to vancomycin, imipenem, linezolid, clindamycin, but was resistant to penicillin-G, ceftazidime, ceftazidime-tazobactam, aztreonam, ciprofloxacin, gatifloxacin, sparfloxacin, cotrimoxazole, doxycycline, erythromycin, gentamicin, and meropenem. Next morning, the patient was shifted to the red zone as he developed bradycardia along with breathing difficulty and feeble pulse. CPR was initiated to revive him. Cardiostimulatory drugs were also administered. Despite best efforts, the patient could not be revived and was declared dead. The immediate cause of death was cardiorespiratory arrest and the antecedent cause was declared to be seizure with aspiration pneumonitis.

## Discussion

*Arcanobacterium* is a non-sporing Gram positive *bacilli* that occurs as a part of normal flora of human skin and pharynx. Named initially as *Corynebacterium hemolyticum*, it was first reported from the cultures of throat and skin samples in 1946

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[1]. The spectrum of diseases includes pharyngitis, cellulitis and skin infections. This organism has also been implicated in sepsis [2], orbital cellulitis [3], chronic osteomyelitis [4], pyothorax [5] and Lemierre syndrome [6]. Infections are probably caused by persons' endogenous strains. There are only a few reports of its isolation from the clinical specimens from India. When grown on Blood agar, it can be confused for *Streptococci* but Gram stain reveals Gram positive *coryneform bacilli*. Its isolation from throat or skin specimens can be of doubtful significance but recovery in pure culture suggests its pathogenic role. In this case, the organism was obtained in pure culture. We are not sure how this organism could have resulted in the fatal complication in this patient but resistance to multiple antibiotics seems to be the culprit. This case report should alert readers of isolation of this organisms from invasive respiratory specimens and its multi-drug resistance.

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