

Pseudomonas mendocina Sepsis in a Healthy Man

William Nseir MD^{1,2}, Hussein Taha MD¹, Ali Abid MD¹ and Julnar Khateeb RN^{1,2}

¹Department of Medicine and ²Infectious Diseases Unit, Holy Family Hospital, Nazareth, Israel

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P*seudomonas mendocina* is a gram-negative non-fermentative rod that was first isolated by Palleroni and others in 1970 from soil and water samples in the province of Mendoza, Argentina [1]. It is an environmental bacterium and is rarely encountered in clinical specimens or reported as a human pathogen. Aragone et al. [2] reported the first case of *P. mendocina* as a human pathogen in a 63 year old man with endocarditis. Since this report, three cases of *P. mendocina* infection of unknown source and a pseudo-outbreak of *P. mendocina* in stem cell cultures have been reported in the English medical literature after a Medline search for the period 1966 to January 2011 (using the search terms *P. mendocina*, infection, and human). We describe a case of *P. mendocina* sepsis in a healthy adult and discuss a possible source of his acquisition of the infection.

PATIENT DESCRIPTION

A previously healthy 31 year old man was admitted to our hospital due to cryptogenic fever (40.5°C) after complaining of fever, chills and malaise. Twenty-four hours before his admission he had been examined in the emergency department because of a fever and sore throat and was discharged home with the diagnosis of a viral infection of the upper respiratory tract. After questioning, the patient

reported that 1 week before the present admission he had experienced two short episodes of shivering (of 2 minutes each) with a very high fever (40.5°C) that was accompanied by chills, fatigue, headache and muscle cramps. His medical history disclosed that he had no immunological disease and had not undergone any surgery; he reported that he did not take any illicit drugs.

On admission he looked ill; his blood pressure was 98/50 mmHg with a regular pulse rate of 100 beats/minute and a respiratory rate of 14–16 breaths/min. The most marked clinical findings were a mild hepatosplenomegaly that was confirmed by abdominal ultrasonography. Laboratory investigation demonstrated a normal white blood cell count (5100/mm³ with 77% neutrophils and 21% lymphocytes), borderline thrombocytopenia (146,000/mm³), erythrocyte sedimentation rate of 70 mm/hr, serum C-reactive protein 23 mg/L, elevated serum creatinine phosphokinase (2282 U/L), and elevated serum aspartate aminotransferase activity (81 U/L). The results of all other clinical laboratory tests and urinalysis were normal, and no signs of a pulmonary infection were found on chest radiography.

Blood cultures were taken by separate venipunctures, and empiric antibiotic therapy (intravenous ceftriaxone 2 g/day and oral doxycycline 100 mg/day) was started on admission. Due to the severity of the illness and no obvious source of infection, nose and throat swabs for H1N1 flu virus were also done, and oseltamivir (Tamiflu[®]) therapy was started at the same time. On the second day of hospitalization, the oseltamivir therapy was stopped because of a negative H1N1 result. Although his temperature dropped

to normal on the second day of hospitalization he was kept in hospital because there was no clinical improvement after defervescence. On the fourth day of hospitalization, two different blood cultures revealed non-fermentative gram-negative bacilli that were identified as *P. mendocina* using the Vitek[®] system (bioMérieux, France). The bacterium was sensitive to amikacin, gentamicin, tobramycin, ceftazidime, ciprofloxacin, ofloxacin and piperacillin, and resistant to ceftriaxone and aztreonam.

Based on these results, the antibiotic therapy was changed to intravenous gentamycin 240 mg/day and oral ofloxacin 400 mg/day. A transthoracic echocardiography that was performed because of the blood culture finding of *P. mendocina* revealed no vegetations on the cardiac valves. One week after his admission, the patient was discharged home in good health with normal temperature, platelet count and serum liver enzymes and CPK activity. Three months after his discharge, he reported that he was well and had not suffered any repeat episodes of high fever, shivering, chills, fatigue, headache or muscle cramps.

During his hospitalization the patient was asked about his work and hobbies. He reported that he had a new pet cockatiel that he fed and watered directly from his mouth. Based on this information, we reexamined his mouth and lips but there were no abnormal findings. Throat swabs and cultures of the drinking water of the bird (a water bottle in the cage) and the house water supply were taken for further bacteriological investigation. *P. mendocina* was cultured from the bird's drinking water.

CPK = creatine phosphokinase

Clinical manifestations and outcomes of reported cases of *P. mendocina* infection

Ref	Age/ Gender	Underlying	symptoms	Isolation Disease	Diagnosis and signs	Therapy site	Outcome
2	63/M	Poliomyelitis, DM, AVR	Fever, chills	Blood	Infective endocarditis	Ceftriaxon + gentamicin (6 wks) followed by oral ciprofloxacin (2 wks)	Survival
3	28/F	Situs inversus, VSD, Dacron	Abdominal pain, dyspnea, flu-like syndrome	Blood	Infective endocarditis	Ampicillin + gentamicin followed by ciprofloxacin (7 wks)	Survival
5	65/M	Renal disease, alcoholism	Lower back pain	Deep tissue pus	Spondylodiscitis	Cefepime followed by ciprofloxacin (7 wks)	Survival
4	36/M	Mentally retarded	Fever, weight loss	Blood	Infective endocarditis	Ceftazidime + amikacin (6 wks)	Survival
This case	31/M	None	Fever, chills	Blood	Bacteremia	Gentamicin + oral ofloxacin (2 wks)	Survival

DM = diabetes mellitus, AVR = aortic valve replacement, VSD = ventricular septal defect

COMMENT

The case reported here is the fifth reported case of *P. mendocina* infection in humans. The previously reported cases of *P. mendocina* infection in humans were three cases of endocarditis [2-4] and one of spondylodiscitis [5]. The therapy given to these four infected individuals was combination antibiotic therapy that consisted of penicillin, a cephalosporin, aminoglycoside, or a fluoroquinolone antibiotic for at least 6 weeks [Table]. Our case was one of sepsis due to *P. mendocina* in a 31 year old otherwise healthy male who completely recovered without any sequelae after combination antibiotic treatment of an aminoglycoside for 4 days and oral fluoroquinolone for 2 weeks.

Based on our enquiries and the results of a bacteriological examination of the patient, the pet cockatiel and both the domestic and the bird's drinking water, it seems that the source of the *P. mendocina* infection was the bird's drinking bottle and/or water, and that the infection was transmitted directly to our patient by his peculiar habit of sharing the bird's drinking water. However, typing of both isolates of *P. mendocina* by PFGE (pulse field gel electrophoresis) was not carried out, thus the exact source of the bacteremia remains unknown. None of the previous reports of *P. mendocina* infection in humans gave information on the source of infection and/or the mode of its transmission.

Corresponding author:

Dr. W. Nseir

Head, Dept. of Internal Medicine and Infectious

Diseases Unit, Holy Family Hospital, P.O. Box 8,
Nazareth 16100, Israel

Phone/Fax: (972-4) 650-9943

email: wnseir3@gmail.com

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