



LETTER TO EDITOR

Sepsis Due to *Shewanella putrefaciens*: A Rare Bacterium in the Blood of an Immuno-Compromised Patient

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Introduction

Immunocompromised patients are susceptible to various infections, the spectrum ranging from infections by skin commensals to various multi drug resistant organisms. Here we would like to highlight one such rare infection by *Shewanella putrefaciens* isolated from the bloodstream of a patient diagnosed with HIV.

A 48-year-old male patient presented to our centre with an alleged history of fall from height approximately 50 feet. On evaluation with imaging multiple rib fractures with hemopneumothorax was detected on the right side. An ICD was inserted on the right side to manage the hemopneumothorax and the patients were shifted to ICU in view of increasing oxygen requirement. After initial stabilisation the patient was put on HFNC (High frequency nasal cannula), and routine investigations were ordered. A thorough history was elicited that the patients was a habitual substance abuser. The CT imaging also revealed cavitatory changes in left upper lobe of the lung, fibronodular opacities in bilateral upper lobes of lungs, grade 3 liver injury, right adrenal hematoma, fracture of right transverse process of L2-L4.

Empirically amoxicillin/clavulanate potassium was started along with other symptomatic medications.

Over the following days persistent high-grade fever (> 100 deg F), high risk behaviour before trauma and the imaging findings prompted us to order testing for HCV, HBV and HIV. His TLC was 44000/mm³ on 7th day of ICU stay. (Figure 1) Culture and sensitivity of blood, urine and mini bronchoalveolar lavage (BAL) was sent. Eventually the patient was tested positive for HCV infection and HIV. While the mini-BAL and urine samples turned out to be sterile. The blood culture yielded positive for *Shewanella putrefaciens* (on 7th day). The antibiotic sensitivity profile showed the organism to be pan sensitive. Antibiotic piperacillin-tazobactam started along with other supportive treatment as per ICU policy. Over the next few days, the patient was off oxygen support, afebrile, routine investigations were within normal limits and shifted to the ward. Further, the patient was referred to the ART clinic and pulmonary medicine OPD for follow-up.

Human infections with *Shewanella* species (*S. algae* & *S. putrefaciens*) are rare but are being increasingly reported. It is a gram-negative saprophytic bacterium and is rarely pathogenic [1]. But *S. algae* seems to cause more human infections than *S. putrefaciens*. The natural habitat being all forms of water and soil, but it is also found in dairy products, oil, and carcasses [2]. It is also an important spoilage agent of protein rich

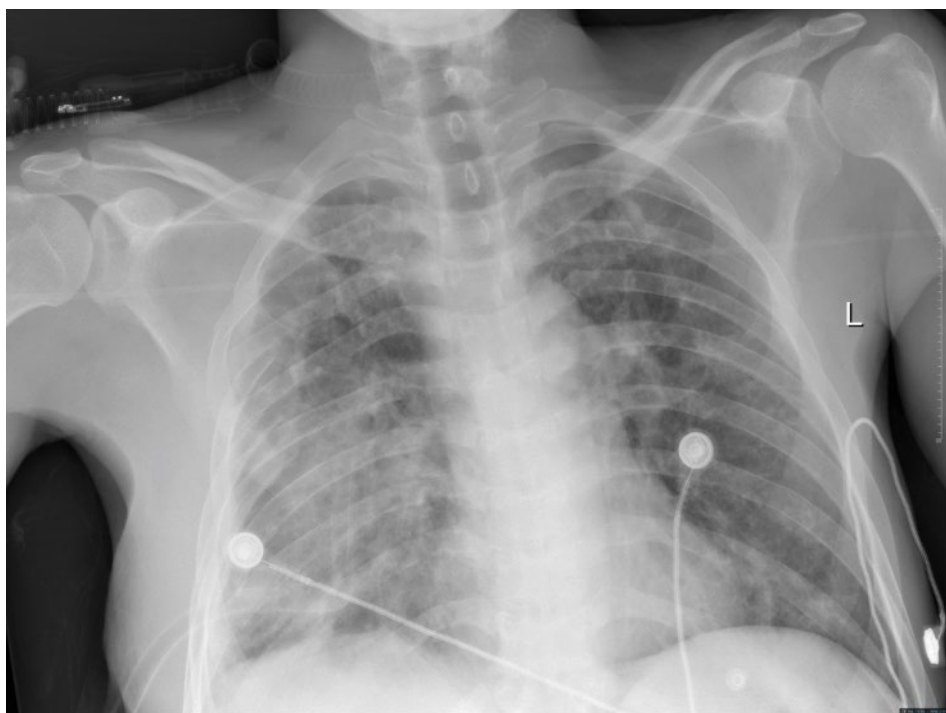


Figure 1: Chest X-ray AP View (Day 7th) showing bilateral Infiltrate (R > L).

refrigerated foods [3]. The presentations range from skin and soft tissue infections, bacteraemia, abdominal and biliary tract infections, ear infections. Bone, urinary tract, eye, endocarditis, meningitis, aneurysm infection, cerebral abscess also being reported but to a lesser extent [4]. *S. putrefaciens* infections induced sepsis can lead to septic shock with multiple organ failure, especially in predisposed individuals. Muller S, et al. reported a mortality rate of 20% (n = 85), but only 18.82% of patients died due to infection [5]. In our case a high degree of suspicion due to the patient's high-risk behaviour, imaging findings with prompt testing followed by quick and prompt treatment resulted in a better patient outcome.

S. putrefaciens is a rare human pathogenic bacterium which can result in infections leading to sepsis or even fatal outcome, especially in predisposed individuals. This is an emerging pathogen, which has been under reported and a bacteria which cannot be ignored.

Support

Nil.

Conflict of Interest

Nil.

References

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