

Bacteremia because of *Streptococcus pseudoporcinus* in a Syphilis-HIV co-infected patient: A case report

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ABSTRACT

A 43 year old male patient came to the emergency department with complaints of severe breathlessness and pedal edema with on & off fever since 15 days. The patient also gave history of sexual exposures with multiple partners. ECHO revealed moderate LV dysfunction, severe aortic regurgitation (AR), trivial mitral regurgitation (MR) with mild pulmonary edema. The patient was diagnosed as a case of severe Aortic regurgitation with atrial fibrillation. The patient was found sero-positive for HIV and Syphilis. His blood cultures obtained prior to initiation of antibiotics showed growth of small 0.5-1mm in diameter, β -hemolytic colonies on blood agar. The isolate was identified to be *Streptococcus pseudoporcinus* by VITEK2 Compact system and was sensitive to vancomycin, linezolid, penicillin, cotrimoxazole and ciprofloxacin. *Streptococcus pseudoporcinus* is usually found as colonizer of female genital tract has been rarely associated with bacteremia. In the present report the patient possibly has acquired the infection from female genital tract because of his abnormal sexual behaviour. Association of *Streptococcus pseudoporcinus* with increased numbers of sexual partners and sexually transmitted infections suggests that further studies of this organism are warranted.

Keywords: Bacteremia, HIV, streptococcus pseudoporcinus, syphilis

Streptococcus pseudoporcinus earlier known as *Streptococcus porcinus* usually found in the upper respiratory and genital tracts of swine.^[1] The bacterium was first isolated from the female genito-urinary tract in the year 2006.^[2] *S. pseudoporcinus* usually recovered from the female genital tract as a colonizer. People having two or more sexual partners were significantly more likely to acquire *S. pseudoporcinus* than monogamous or abstinent persons.^[3] On blood agar, colonies are generally small, circular with a large zone of complete hemolysis. The species cross-react with Lancefield group B Streptococcus (GBS) antisera.^[4] Therefore, the organism can be misidentified as *Streptococcus agalactiae* especially in specimens of the female genital tract. The first case of *Streptococcus pseudoporcinus* bacteremia was reported in the year 2017 associated with endocarditis from a nongenitourinary source.^[5] Currently, little is known about the

epidemiology of this organism or its role in human disease. Here, we report a case of bacteremia because of *Streptococcus pseudoporcinus* in a patient having syphilis-HIV co-infection.

History

A 43-year-old male patient came to the emergency department with complaints of severe breathlessness and pedal edema with on and off a fever for 15 days. On physical examination, his temperature was 101°F, pulse 120 beats per minute water-hammer pulse, respiration rate was 18 per minute, blood pressure 128 mmHg/60 mmHg, and SPO2 was 98%. On auscultation, early diastolic murmur (EDM) was noticed. His blood sample was sent for routine hematological investigation and culture. The patient was admitted to the hospital and received ceftriaxone 2 gm IV. His hematological investigations revealed white blood cell count 13,860/uL, with neutrophilia of 90.7%, hemoglobin 8.3 g/dL, and platelet 134,000/uL. Erythrocyte sediment rate 66 mm/h and C-reactive protein 8.04 mg/dL. The patient also gave a history of

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Figure 1: Growth of *Streptococcus pseudoporcinus* on Blood agar

sexual exposures with multiple partners. His blood was sent for HIV and Syphilis. The patient was found seropositive for HIV and Syphilis (point of care test Alere Determine Syphilis-TP). Venereal Disease Research Laboratory (VDRL) testing was done to detect active Syphilis and titer was found as 8 dils. An ECHO was advised to see any cardiac complication because of syphilis, which revealed moderate LV dysfunction, severe aortic regurgitation (AR), trivial mitral regurgitation (MR) with mild pulmonary edema. The patient was diagnosed as a case of severe aortic regurgitation with atrial fibrillation. His blood cultures showed growth of small 0.5–1 mm in diameter, white circular colonies with a wide zone of β -hemolysis on blood agar after 24 h of incubation. Figure 1 shows growth of *Streptococcus pseudoporcinus* blood agar Colonies were catalase-negative. Growth in 6.5% NaCl broth, bile esculin and hippurate hydrolysis test were positive. The isolate was identified to be *Streptococcus pseudoporcinus* by the VITEK2 Compact system (bioMe´rieux) was sensitive to vancomycin, linezolid, penicillin, cotrimoxazole and ciprofloxacin.

Discussion

Streptococcus pseudoporcinus is usually found as a colonizer of the female genital tract has been rarely associated with bacteremia.^[2] Most of the reported cases of *Streptococcus pseudoporcinus* infection were from female genital tract isolates.^[2,4,6] Previous studies reported variability of cross-reactivity of B antigen agglutination tests of *S. pseudoporcinus* isolates Hence it can be misidentified as *Streptococcus agalactiae*. *S. pseudoporcinus* infection might not be associated with invasive disease to the same extent that *S. agalactiae* infection. The clinical significance of genitourinary *S. pseudoporcinus*, patients' clinical characteristics, and their relationship to peripartum neonatal and maternal infections requires further investigation. More studies are needed to address this hypothesis. Other than genitourinary, only one case of a thumb infection has been reported because of *Streptococcus pseudoporcinus* reported from an injury sustained

by a car door.^[7] In the present report, the patient possibly has acquired the infection from the female genital tract because of his abnormal sexual behavior. To the best of our knowledge, there has been no published report of *Streptococcus pseudoporcinus* bacteremia in-patient with syphilis-HIV co-infection in a male patient. Moreover, its co-epidemiology with increased numbers of sexual partners and sexually transmitted infections suggests that further studies of this organism are warranted.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There is no conflicts of interest.

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