Short Communication

Aeromonas sobria Prostatitis and Septic Shock in a Healthy Man with Chronic Alcoholic Consumption

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SUMMARY: Prostate infection caused by Aeromonas sobria has not been reported in the literature. We presented a 44-year-old healthy man with a habit of alcoholic consumption who was admitted because of primary A. sobria prostatitis with septicemia. The patient was successfully treated with intravenous ofloxacin and was uneventful after a half-year follow-up. Based on our rare case, we suggest to clinical physicians that prostatitis might be considered in healthy male patients with A. sobria bacteremia and a vague primary infection focus.

Aeromonas sobria, belonging to the genus Aeromonas, has often been reported as a causative organism of invasive and fatal infection in human beings. The spectrum of Aeromonas infection in humans includes acute gastroenteritis, hepatobiliary tract infection, pneumonia, empyema, meningitis, septic arthritis, osteomyelitis, endocarditis, and soft tissue infection (1). A review of the literature shows that prostatitis infection caused by A. sobria has never been reported in a patient without previous urinary catheter placement. Here, we report a man with primary prostatitis and septic shock due to A. sobria.

A 44-year-old unmarried man with a habit of chronic alcoholic consumption presented with intermittent abdominal pain for 1 week. Aside from his chronic alcoholic consumption, he was well before this episode and had no recent soft tissue injury or infection. On June 22, 2006, he was found lying on the floor and was sent to our hospital.

Upon admission to the emergency room, the patient had a fever. His temperature was 38.5°C, and his blood pressure was 74/42 mmHg. His heart rate was 133/min, and his respiration rate was 24/min. His breathing sounds were clear, and there was no heart murmur on auscultation. The liver and spleen were not palpable, and the Murphy’s sign was negative. There were no lesions on the skin except for some abra- sions wounds on his face. Laboratory examination revealed that the leukocyte count was 1,700/μL with 19% band form and 50% segmented form, the platelet count was 99 × 103/μL, the hemoglobin was 11 g/dL with elevated mean corpuscle volume (MCV) and the hematocrit was 32%. Aspartate aminotransferase (AST) and alanine aminotransferase (ALT) were elevated to 291 IU/L and 124 IU/L, respectively. Amylase and lipase were within normal reference values at 134 IU/L and 238 IU/L, respectively. The serum creatinine level was elevated to 2.4 mg/dL. Prothrombin time (PT) was prolonged to 19.8 s, and international normalized ratio (INR) was 1.8. The activated partial thrombin time (aPTT) was 41.9 s. Arterial blood gas analysis under nasal prong with an oxygen flow of 3 L/min revealed a pH of 7.359, PaCO2 of 19.7 mmHg, PaO2 of 138.2 mmHg, HCO3– of 10.9 meq, and BE of –12 meq. The blood lactate was 6.7 mmole/L. The urinalysis showed pyuria with leukocyte 103–105/μL with 25–30/HPF with bacteriuria. The patient was unresponsive to broad-spectrum antibiotics and was transferred to the intensive care unit for close monitoring.

Immediately after admission, endotracheal tube intubation with mechanical ventilator support was administered due to severe respiratory distress. Continued mixed venous O2 saturation (SvO2) monitoring with fluid resuscitation was initiated according to the sepsis campaign guidelines (2). Due to persistent spiking fever on the third day after admission, computed tomography (CT) of the abdomen was performed, which showed a fatty liver and an irregularly shaped hypointense area in the prostate, implying prostatitis. Otherwise, there were no remarkable findings with respect to the other organs in the abdominal cavity. The prostate specific antigen was 8.31 ng/mL (<4 ng/mL). The transrectal ultrasonography showed heterogeneous change of the prostate gland with hypervascularity that was compatible with infectious prostatitis and did not favor malignancy. In addition, a soft surface of the prostate with tenderness was noted by digital examination. Later, A. sobria, whose identity was confirmed by the API 20E system (BioMerieux, Marcy-l’Etoile, France) and the schemes of biochemical identification proposed by Abbott et al. (3), was isolated from the cultures of the blood and urine but not the stool. Both isolates were sensitive to ciprofloxacin, amikacin, ceftazidime, lomefloxacin, flomoxef, cefpirome, cefuroxime, and gentamicin but were resistant to ampicillin and immediately susceptible to cefazolin, amoxicillin/clavunate, and piperacillin/tazobactam. The antibiotic was changed to intravenous ofloxacin at 400 mg every 12 h. The patient’s condition improved gradually, and he was successfully weaned from the ventilator on the 12th hospital day. The antibiotic was shifted to oral ciprofloxacin at 500 mg every 12 h to complete the 14-day treatment course. Finally, he was discharged on July 6, 2006 with observation in our outpatient clinic.

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a half-year follow-up, the patient was uneventful with no recurrence of prostatitis or evidence of prostate tumor. *Aeromonas* spp., belonging to the genus *Aeromonas* of oxidase-producing Gram-negative bacilli, have been recognized to be a threat to human beings and can cause invasive and fatal infections. Though there are at least 13 *Aeromonas* spp. that have been recognized, more than 85% of human infections were caused by *A. hydrophila*, *A. caviae*, and *A. veronii* biogroup veronii (4). The disease spectrum caused by *Aeromonas* infection in humans includes acute gastroenteritis, septicemia, hepatobiliary tract infections, soft tissue infections, indwelling-device related infections, meningitis, peritonitis, and hemolytic uremic syndrome (5). To date, primary prostatitis with bacteremia caused by *A. sobria* has not been reported. To the best of our knowledge, the patient is the first case in the English literature. CT and transrectal ultrasound confirmed his prostatitis. The *A. sobria* infection was established by urine culture and blood culture as the same microbial strain identified by their phenotype of biochemical characteristics and antimicrobial susceptibility pattern. In addition, there was no other infection focus after an extensive survey.

Though both immunocompetent and immunocompromised patients can get an *Aeromonas* infection (1,5,6), the most common underlying conditions associated with *Aeromonas* septicemia are malignancy and chronic liver diseases (7). In our case, there was no obvious liver cirrhosis or malignancy. However, the chronic alcoholic consumption may result in subclinical hepatobiliary tract disease, which further leads to the patient’s susceptibility to *Aeromonas* infection. Furthermore, the patient’s lower socioeconomic status may have increased the likelihood of exposure to water or soil that was contaminated by *Aeromonas* spp. In 1996, Krieger et al. claimed that 77% of chronic prostatitis patients were PCR-positive for prokaryotic rRNA-encoding DNA sequences (tDNAs) despite negative cultures using optimal techniques (8). In 1998, Riley et al. reported that 8 (35%) of 23 DNA-positive patients had sequences identical to or >95% similar to that of *A. hydrophila* (9). This implies that *Aeromonas* spp. is a potential prostatic pathogen. However, the route and mechanism of prostate infection by *A. sobria* are unknown and require further study. On the other hand, the prostate is well known to be a vascular-rich organ, but it remains unclear why prostatitis has been rare among *Aeromonas* spp. infections. The rarity of reports of *Aeromonas* spp. infection of this tissue may be due to the shortage of direct evidence from prostate biopsy during the acute stage, as this procedure may aggravate the bacteremia and cause the clinical condition to deteriorate. In addition, Krieger et al. reported that while bacterial prostatitis can be diagnosed by standard clinical culture methods, such a diagnosis occurs in less than 10% of patients (10). However, further study is required to determine the actual reason. *A. sobria* was sensitive to fluoroquinolone, the second and higher generations of cephalosporin, and aminoglycoside in vitro (11). In prostatitis, fluoroquinolones are recommended for their favorable pharmacokinetic profile (12). In a previous report (13), MICs of all fluoroquinolones including ciprofloxacin and ofloxacin against *A. hydrophila* isolates were found to be less than or equal to 0.03 mg/L. In our patient, the intravenous ofloxacin also showed a better response than flomoxef, though the isolated *A. sobria* is sensitive to both drugs in vitro.

In conclusion, based on our rare case report, we suggest that prostatitis might be considered in healthy male patients with *A. sobria* bacteremia and the prostate as the vague primary infection focus. In addition, the results of our case suggest that fluoroquinolone, like ofloxacin, may be the best choice in patients with primary *A. sobria* prostatitis due to its favorable pharmacokinetic profile in the prostate.

**REFERENCES**


