

Serratia Liquefaciens as a Rare Reason Capd Peritonitis: Case Report

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Abstract: *The majority of peritonitis cases are caused by bacteria; a small percentage of the cases are caused by fungi furthermore most common cause is the candida species. The role of viral infection is uncertain. Coagulase negative staphylococcus is the most common causative agent in patients with CAPD. In the report, we presented that rare a case report has CAPD peritonitis resulting from infection with serratia liquefaciens.*

Keywords: *peritonitis, continuous peritoneal peritonitis dialysis, serratia liquefaciens*

1. INTRODUCTION

Peritonitis is one of the most important complications of peritoneal dialysis and continues to be the main reason for patients to undergo hemodialysis from peritoneal dialysis despite the decrease in general peritonitis rates. The majority of peritonitis cases are caused by bacteria; A small percentage of the cases are caused by fungi furthermore most common cause is the Candida species. The role of viral infection is uncertain, but viral infection makes patients susceptible to bacterial peritonitis. A 50% gram positive, 15% negative, 20% culture negative, 4% polymicrobial and 2% fungal were reported in a research. In another study, 179 peritonitis were analyzed for coagulase negative staphylococci (21.8%), Staphylococcus aureus (8.9%), Enterococcus spp. (5.6%) and E. coli (3.3%). In 82 of 179 peritonitis (45.8%) the culture was negative. [2] Among the reported peritonitis agents, the number of gram positive agents decreases while the number of gram positive agents decreases. Coagulase negative staphylococcus is the most common causative agent in patients with CAPD. [1]

Case: A 54-year-old male patient. Patient who has begun peritoneal dialysis due to rejection 8 months after renal transplantation with a diagnosis of chronic kidney disease for 8 years complains of abdominal pain in the last 3 days. There is ambiguous sensitivity on the physical examination, no rebound, no defense. In other system examinations, respiratory voices were decreased in right lung baseline, pretibial edema + / ++. The reason for the greater prevalence of pretibial edema in the left leg is caused by the circulatory defect due to thrombophlebitis after the patient has had a permanent femoral dialysis catheter insertion. Peritonitis was suspected, and cell counts were measured from the peritoneum. The patient was hospitalized to the nephrology clinic with a peritonitis diagnosis with a total white blood cell of 4500 / mm³, 93% neutrophil (4200 / mm³). Peritoneal culture and syngeneic nasal culture were obtained. Empirical intraperitoneal gentamicin 40 mg + cefazolin 1.5 g was initiated. 0.5ml enoxaparin was used for each change. Serratia liquefaciens (amoxicillin / clavulonate, ampicillin and colistin-resistant, imipenem-less sensitive) in culture after 2 days. There was no reproduction in the nasal culture. The patient with right-sided pleural effusion, who did not recover by dialysis, was directed to interventional radiology. The patient had a thoracentesis catheter. Peritoneal culture and syngeneic nasal culture were obtained. Empirical intraperitoneal gentamicin 40 mg + cefazolin 1.5 g was initiated. 0.5ml enoxaparin was used for each change. Serratia liquefaciens (amoxicillin / clavulonate, ampicillin and colistin-resistant, imipenem-less sensitive) in culture after 2 days. There was no reproduction in the nasal culture. The patient with right-sided pleural effusion, who did not recover by dialysis, was directed to interventional radiology. Thoracentesis catheter was inserted the patient. Patient was left with open drainage. The peritoneal dialysis continued in the form of SAPD shaped unchanged. On the fourth day of cell counts of the patients complaining of complaints the following day the complaints were reduced to a total white cell 100 / mm³ (lymphocytes 83%). The patient's treatment is scheduled for fourteen days. The patient whose treatment was completed and the training was repeated was discharged with total cure.

2. DISCUSSION

Serratia species are opportunistic gram-negative bacteria classified in the tribe Klebsielleae and the large family Enterobacteriaceae. Serratia are widespread in the environment, but are not a common component of the human fecal flora. Serratia marcescens is the primary pathogenic species of Serratia. Rare reports have described disease resulting from infection with Serratia plymuthica, Serratia liquefaciens, Serratia rubidaea, Serratia odorifera, and Serratia fonticola. Serratia liquifaciens is the second most frequently isolated species in serratia species. In 1971, Serrati liquifaciens isolated from respiratory, urinary, wound and ulcer samples were first documented and published. Mucopurulent bronchitis, cellulitis, gangrenous toe, and pneumonia cases have been isolated, but the patient has developed a corneal abscess in the patient wearing a soft contact lens. Urinary system infections have been reported and cystometry and cystoscopy have been reported as a source. Cases isolated from cerebrospinal fluid have been reported. The largest epidemic was recorded in erythropoietin origin in a hemodialysis center in Colorado. [3] Serratia are capable of thriving in diverse environments, including water, soil, and the digestive tracts of various animals. It appears that at least some Serratia isolates interfere with macrophage function or viability. In the hospital, Serratia species tend to colonize the respiratory and urinary tracts, rather than the gastrointestinal tract, in adults. Serratia infection is responsible for about 2% of nosocomial infections of the bloodstream, lower respiratory tract, urinary tract, surgical wounds, and skin and soft tissues in adult patients. An outbreak of S marcescens bloodstream infections was identified in patients receiving contaminated bags of parenteral nutrition. Serratia infection has caused endocarditis and osteomyelitis in people addicted to heroin. Cases of Serratia septic arthritis have been reported in outpatients receiving intra-articular injections. An outbreak of meningitis caused by S marcescens in patients who had undergone spinal anaesthesia for caesarean section has been ascribed to contaminated medications used for this purpose. The prevalence of Serratia species as a cause of nosocomial infections is diminishing, but these bacteria are still able to cause hospital outbreaks, especially in intensive care units. In a population-based study of Serratia bacteremia, the 7-day and 6-month mortality rates were 5% and 37%, respectively. Most (68%) episodes of Serratia bacteremia occur in males. Outbreaks of Serratia infection occur in neonates and infants. In adults, most Serratia infections are isolated, but occasional nosocomial outbreaks occur. [6]

Alrodhan, M.A. Et al. In the study he did, the agent was isolated from the pneumonic sheep lungs. [4] Luisa A. et al. Reported that erythropoietin was an epidemic due to alpha-induced work. [7] Tzu-Yi Chuang et al. Infectious endocarditis with Serratia liquefaciens causing multiorgan failure was first described. [8]

Patients with Serratia intra-abdominal infections may present with biliary drainage, hepatic abscess, pancreatic abscess, and peritoneal exudate. Serratia peritonitis can complicate peritoneal dialysis.

Historical reviews of peritonitis among peritoneal dialysis patients reported the following frequency of symptoms and signs. Abdominal pain: 79 to 88 percent, fever (greater than 37.5°C): 29 to 53 percent, Nausea or vomiting: 31 to 51 percent, cloudy effluent: 84 percent, hypotension: 18 percent

The diagnosis of peritonitis should be suspected in a peritoneal dialysis patient with a characteristic clinical presentation. A presumptive diagnosis is made if the peritoneal fluid white count is greater than 100 cells/mm³ and the percentage of neutrophils is greater than 50 percent. Among all patients, the diagnosis of peritonitis is confirmed by a positive dialysate culture. The culture is positive in approximately 80 to 95 percent of cases if proper culture technique is followed [5]

Serratia infections should be treated with an aminoglycoside plus an antipseudomonal beta-lactam, as the single use of a beta-lactam can select for resistant strains. Most strains are susceptible to amikacin, but reports indicate increasing resistance to gentamicin and tobramycin. Quinolones also are highly active against most strains. Cefepime may be a reasonable option for the treatment of infections with Serratia strains that produce AmpC β -lactamase. Definitive therapy should be based on the results of susceptibility testing because multiresistant strains are common. Avoid reusing single-use vials, and reject possibly contaminated intravenous fluids. Avoid using soaps or disinfectants that may be contaminated. Avoid using tap water for administration of medication orally or via a nasogastric tube in critically ill patients. Use disposable ECG leads. Emphasize standard precautions. Hospital EMPLOYEES SHOULD WASH THEIR HANDS BEFORE AND AFTER CONTACT WITH PATIENTS. THE MOST COMMON mechanism of Serratia transmission in nosocomial outbreaks is through soiled hands. Long-

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term carriage of an epidemic strain of *S marcescens* on the hands of a health care worker has been described. Intravenous lines should be removed as soon as possible. [6]

Approximately 75% cure is provided. In some cases, hemodialysis is required. Mortality varies according to the effect, but the highest mortality rate is observed in fungal infections. [1]

Severe *Serratia* infection (bacteremia) carries a mortality rate of 26%. Among survivors, the prognosis for complete recovery is good. [6]

3. CONCLUSION

The risk of complications with the highest rate in patients who has chronic renal failure with CAPD is peritonitis. Following the patients, *Enterococcus* spp. 5.6% [1] is likely to be monitored. In the cases of CAPD peritonitis *serratia liquefaciens* should be kept in mind even though it is a rare peritonitis effect.

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