Stenotrophomonas maltophilia is increasingly recognized as an important cause of nosocomial infection. S. maltophilia peritonitis is a rare complication of chronic peritoneal dialysis. Here, we report the case of a 54-year-old female with end-stage renal disease treated with automated peritoneal dialysis. The patient had no previous history of peritonitis or catheter exit-site infection. She presented with fever, abdominal pain, and cloudy peritoneal effluent. The organism isolated from the effluent was S. maltophilia. The patient received trimethoprim 320 mg and sulfamethoxazole 1600 mg for 6 weeks, plus amikacin 200 mg for 14 days. She recovered completely, with no need for catheter removal. No recurrence was observed.

Key words
Peritonitis, Stenotrophomonas maltophilia

Introduction
Stenotrophomonas maltophilia is non fermentative, aerobic, gram-negative bacillus, previously known as Pseudomonas maltophilia or Xanthomonas maltophilia (1). Unlike P. aeruginosa, S. maltophilia is an organism of low virulence. It is an infrequent pathogen in humans and is not usually capable of causing disease in healthy hosts. The organism has been recognized as an opportunistic pathogen that affects patients with debilitating illness, a compromised immune system, or an indwelling catheter (2,3). S. maltophilia is a common environmental saprophyte that has been isolated from water (4), soil, foods (5), hospital equipment (2), animal sources (6), and humans (7,8). S. maltophilia infection has been occasionally reported in patients receiving chronic peritoneal dialysis (9–11). Szeto and colleagues reported a series of six cases of peritonitis caused by S. maltophilia (9). The use of broad-spectrum antibiotics was the major risk factor, and the outcome with medical treatment alone was poor.

Here, we report a case of S. maltophilia peritonitis in a patient receiving automated peritoneal dialysis successfully managed by medical treatment.

Case report
A 54-year-old female patient had been on chronic automated peritoneal dialysis for 23 months because of renal failure attributable to Alport disease. She had no previous history of peritonitis or catheter exit-site infection. She had received no broad-spectrum antibiotics and had not been hospitalized before she presented at our outpatient clinic with fever, mild abdominal pain, diffuse tenderness of the abdomen, and cloudy peritoneal effluent.

The peritoneal fluid showed 17,800 cells/µL, 100% of which were neutrophils. No bacteria were found on Gram stain smears, and a culture was negative for bacteria and yeast. She was treated empirically with ceftazidime 1 g intraperitoneally and vancomycin 1 g intravenously daily. After 3 days, she became asymptomatic. Four days later, she showed symptoms of acute peritonitis and was hospitalized. A new peritoneal fluid leukocyte count showed 7,300 cells/µL, with 50% neutrophils. A gram-negative bacteria was found on a Gram stain smear. The organism identified from the peritoneal effluent was S. maltophilia. The S. maltophilia strain isolated was susceptible to trimethoprim–sulfamethoxazole [minimum inhibitory concentration (MIC): 10 µg/mL], ciprofloxacin (0.5 µg/mL), and amikacin (32 µg/mL), but was resistant to ceftazidime and piperacillin/tazobactam. After identification of the bacterium and susceptibility testing, ceftazidime was stopped, and the patient was given trimethoprim 320 mg and sulfamethoxazole 1600 mg by mouth for 6 weeks, plus...
amikacin 200 mg intraperitoneally for 14 days. Four days after therapy adjustment, the peritoneal fluid leukocyte count was 80 cells/µL, and a fluid culture was negative. The patient was discharged 9 days after admission and recovered completely with no need for catheter removal. No recurrence was observed.

**Discussion**

*S. maltophilia* is increasingly being recognized as nosocomial in nature (2). The previously reported predisposing factors for *S. maltophilia* infection were prior antibiotic therapy with broad-spectrum β-lactams (12), malignant lesion (13), central venous catheterization (3,12), immunosuppressive therapy (9), and prolonged hospitalization (2,12). Although the bacterium is mainly a nosocomial pathogen, community-acquired infection was previously recognized, and the micro-organism has been isolated from water, soil, foods, and humans (4,7,8).

The patient in the present study had no risk factors for the development of *S. maltophilia* infection other than chronic renal failure and the presence of an indwelling Tenckhoff catheter. She acquired the infection in the community, although the means of transmission was not identified. The infection was most likely caused by contact with contaminated water, because the patient lives in a rural community and uses a water reservoir.

*S. maltophilia* infection has occasionally been reported in patients receiving chronic peritoneal dialysis. Recently, Baek and colleagues (14) reported 5 cases of *S. maltophilia* infection associated with chronic peritoneal dialysis: 3 cases in patients with peritonitis, and 2 cases in patients with exit-site infections. The authors identified infection, anemia, malnutrition, and other comorbidities such as diabetes mellitus as factors predisposing to *S. maltophilia* infection.

Previous authors (11) reported poor outcomes for *S. maltophilia* peritonitis with antibiotic therapy and recommended early removal of the peritoneal catheter as an adjunct to treatment. The patient in the present study responded well to antibiotic treatment with trimethoprim–sulfamethoxazole for 6 weeks, remained on automated peritoneal dialysis, did not require removal of the Tenckhoff catheter, and had no recurrence of infection. Her favorable evolution is probably due to the fact that she acquired the infection in the community and did not have important risk factors for *S. maltophilia* infection apart from being on peritoneal dialysis. Taylor *et al.* (11) reported that 6 of 7 peritonitis episodes were community-acquired; however, treatment of peritonitis required removal of the Tenckhoff catheter in 4 of the 7 cases.

Treatment of *S. maltophilia* infections presents special difficulties, because the organism is usually resistant to expanded-spectrum β-lactam and aminoglycoside agents. Several studies have found trimethoprim–sulfamethoxazole to be active against most strains of the bacterium, and that drug combination has long been regarded as the treatment of choice for *S. maltophilia* infection (15).

**Conclusions**

Our case confirms the importance of adequate microbiologic identification in peritoneal dialysis peritonitis. Community-acquired *S. maltophilia* causes peritonitis in patients on automated peritoneal dialysis who present only renal failure and a peritoneal catheter as predisposing factors. Early administration of the appropriate antibiotic combination, which includes trimethoprim–sulfamethoxazole, can successfully treat *S. maltophilia* peritonitis and avoid peritoneal catheter removal.

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**References**


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