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Bacteremia Caused by *Stenotrophomonas maltophilia* in a Dialysis Patient With a Long-Term Central Venous Catheter

TO THE EDITOR—Intravascular catheters are essential in complex medical and surgical interventions, such as hemodialysis; bone-marrow and organ transplantation; cancer therapy; and abdominal, cardiothoracic, and trauma surgery.[1] *Stenotrophomonas maltophilia* has recently emerged as an important nosocomial pathogen, with at least 5 reports in the English-language literature documenting infection with this pathogen in hemodialysis patients.[2-6] We describe a hemodialysis patient who developed *S. maltophilia* bacteremia associated with use of a tunneled subclavian catheter.

A 43-year-old man with chronic pyelonephritis and recurrent nephrolithiasis first underwent hemodialysis because of end-stage renal failure in May 1995. According to the patient's history, in the seventh year after starting hemodialysis, multiple vascular accesses failed. The patient refused peritoneal dialysis, which necessitated insertion of a long-term indwelling silicone catheter (Medcomp) into the right subclavian vein on October 12, 2001. From October 19 to November 10, the patient had at least 8 episodes of bacteremia, and he presented with clinical symptoms of high fever, chills, and abdominal pain to a secondary hospital dialysis center in a city other than that where our institution is located (Dicle University Medical Hospital, Diyarbakir, Turkey). The patient had been receiving broad-spectrum antibiotic therapy, which included ceftriaxone, cefazolin, and gentamicin, for 14 days in a secondary-care hospital. However, the patient did not well respond to broad-spectrum antibiotic therapy. Therefore, he was referred to the hemodialysis center at our institution on November 11, 2001. We observed 2 additional episodes of fever and chills and observable inflammation at the catheter exit site. However, we did not find another complications of catheter-related bacteremia, such as endocarditis or abscess. Teicoplanin and cefazolin therapy was initiated after blood samples were obtained for paired blood cultures on November 18, 2001.

The patient's vital signs were as follows: blood pressure, 110/70 mm Hg; heart rate, 161 beats/minute; respiratory rate, 26 breaths/minute; and temperature (oral), 38.8°C. There was crepitation in the basal pulmonary area. A complete blood count revealed a white blood cell count of 15,600 cells/mm^3 (70% polymorphonuclear cells), a hematocrit of 38.3%, an erythrocyte sedimentation rate of 70 mm/h, and a thrombocyte count of 274,000 cells/mm^3. Chest radiographs revealed minimal bibasilar effusion. Electrocardiography revealed atrial tachycardia, T-wave abnormality, and left anterior fascicular block. Echocardiography showed a first-degree mitral valve failure and left ventricular posterior wall hypertrophy. Urinalysis was not performed because the patient was anuric. When blood cultures were indicated, 3-7 mL of venous blood was drawn from the catheter and from 2 peripheral veins after skin preparation with povidone-iodine. All blood culture bottles were incubated for up to 8 days in an automated blood culture system (Bactec 9240; Becton-Dickinson). Incubation of blood cultures for 48 hours yielded bacterial growth of *S. maltophilia.* The isolate's susceptibility to antibiotics was examined with an automated system (AutoSceptor; Becton Dickinson), which revealed resistance or intermediate susceptibility to all antibiotics except ciprofloxacin, ceftazidime, ticarcillin-clavulanate, cefoperazone, and cotrimoxazole.

Therapy with cotrimoxazole and ciprofloxacin was initiated. Despite continued therapy, the patient had 3 further episodes of fever and chills. On December 20, 2001, the long-term indwelling silicone catheter was removed according to a strict protocol under aseptic conditions. After withdrawal, the distal 5 cm part of the catheter was cut off with sterile scissors and sent in aseptic conditions to the infectious diseases laboratory of our institution, where it was cultured by means of the semiquantitative method described by Maki et al.[7] The culture again yielded *S. maltophilia.* In this instance, the diagnosis of catheter-related bacteremia was confirmed by multiple cultures positive for the pathogen (ie, at least 3 consecutive positive blood cultures) and the detection of the same pathogen in catheter culture and blood culture. Since then, the patient has had no further episodes of bacteremia.

Catheter-related bacteremia frequently occurs in outpatients undergoing hemodialysis. The incidence of bacteremia in outpatients undergoing hemodialysis with dual-lumen, tunneled, cuffed catheters has been reported to be 3.9 episodes per 1,000 catheter-days, although catheter-related bacteremia is thought to occur less frequently in patients with tunneled, cuffed catheters.[8] Organisms causing catheter-related bacteremia generally enter the bloodstream from the skin

insertion site or through the hub of the catheter device. Hub contamination is more common in long-term catheters that are left in place for more than 10 days, because such catheters often have to be intercepted and manipulated.[9] Elting and Bodey,[10] together with other investigators,[4,11] have also shown that most patients with *S. maltophilia* infections had received broad-spectrum antibiotics, and a large percentage of these patients had indwelling catheters. Moreover, antibiotic therapy alone does not generally cure catheter-related bacteremia caused by *Pseudomonas* species, and removal of the catheter is recommended.[1]

In conclusion, the treatment of catheter-related infections caused by *S. maltophilia* must include early and accurate diagnosis, use of effective preventive strategies, and appropriate therapeutic clinical decisions about catheter removal.

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