Peritoneal Dialysis (PD)-related Peritonitis Caused by Bergeyella zoohelcum

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Bergeyella zoohelcum (B. zoohelcum) is an aerobic, rod-shaped, gram-negative and non-motile bacterium which can be easily found in the normal oral microbiota of dogs and cats. A 40-year-old woman who had been on Continuous Ambulatory Peritoneal Dialysis (CAPD) for four-months visited the hospital complaining of abdominal pain. She was afebrile and other vital signs were stable. The effluent dialysate was turbid and fluid analysis of the dialysate showed Total Nucleated Cell count (TNC) was 14,040/μL (Neutrophil 86 %). She was diagnosed as CAPD-related peritonitis. She was treated with empirical intraperitoneal Cefazolin and Ceftazidime. The dialysate culture result showed Bergeyella zoohelcum. The cultured B. zoohelcum was susceptible to penicillins, cephalosporins, monobactams, carbapenems, aminoglycosides, fluoroquinolones and trimethoprim/sulfamethoxazole which have antibacterial activity against gram-negative bacteria. The cultured B. zoohelcum grew well on blood agar plate, but did not grow well on MacConkey agar plate (Figure 1A). Gram-stained smears showed gram-negative rods (Figure 1B). The TNC of dialysate decreased while maintaining antibiotics for 21days (Figure 2). After cessation of antibiotics, we could find that she was doing well without recurrence. It is the first case of CAPD peritonitis caused by B. zoohelcum. She lives with a cat, and contamination of sharing same environment with pets might have resulted B. zoohelcum infection. According to previous reports, B. zoohelcum is a zoonotic pathogen and is known to cause cellulitis, bacteremia, and infective endocarditis in human after dog or cat bites. From this case, we learned that B. zoohelcum can cause PD related peritonitis and therefore patient on PD who have pets should pay special attention to hygiene and pets should be separated from the places where patient exchanges dialysate.

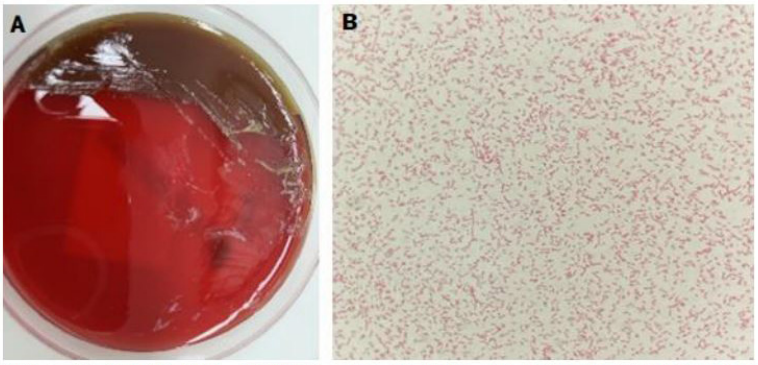

Figure 1. (A) Colonies of *B. zoohelcum* grown on blood agar plate. (B) Gram negative rod visualized under light microscopy

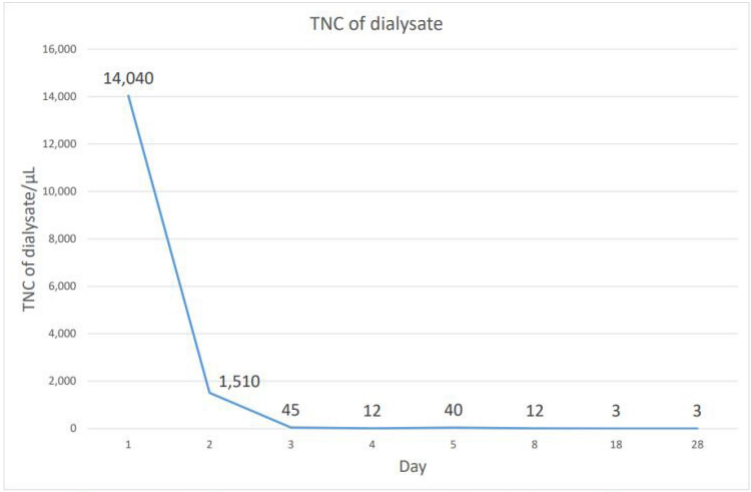

Figure 2. Changes in the TNC of dialysate over time after administration of antibiotics