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Dialysis

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A case of peritoneal dialysis-associated peritonitis caused by Agromyces mediolanus

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Background: *Agromyces mediolanus (A. mediolanus)* is a gram-positive organism found in soil and is an unusual pathogen in human infection. Only one case of human infection by A. mediolanus was reported in the world and no cases of peritoneal dialysis (PD)-associated peritonitis by *A. mediolanus* have never been reported yet.
Methods: We report the first case of PD-associated peritonitis due to *A. mediolanus*, which was identified by matrix-assisted laser desorption ionization-time of flight mass spectrometry. The patient recovered following catheter removal and intravenous antibiotic treatment.
Results: A 59-year-old Korean man who had been treated with CAPD for 2 years was admitted to our hospital because of turbid peritoneal effluent accompanied by constant diffuse abdominal pain that began 2-weeks prior to his admission. On admission, his blood pressure was 160/80 mm Hg, heart rate was 78 beats/min, respiratory rate was 20/min, and body temperature was 37.0ºC. His abdomen was diffusely distended with normal bowel sounds. However, the patient had an exit-site infection with purulent secretion. The laboratory findings showed PD peritonitis: the white blood cell (WBC) count of the peritoneal effluents was 1157/mm^3 with a neutrophil predominance (91.3%). His hemoglobin was 10.0 g/dl, WBC count was 9.1 x 10^9/L, and C-reactive protein was 2.50 mg/dl. After peritoneal fluid was sent for bacterial culture, a single 1-g dose of cefazolin and a single 1-g dose of ceftazidime were given intraperitoneally per day. Two peritoneal fluid samples were inoculated into a BACTEC plus Aerobic/F culture bottle (Becton Dickinson Diagnostic Instrument System, Drogheda, Ireland) and incubated in a BACT/ALERT 3D Blood Culture System (Biomerieux, Marcy l`etoile, France). The peritoneal WBC decreased to 364/mm^3, but the patient's clinical condition did not improve on the fifth day after starting intraperitoneal cefazolin and ceftazidime. Culture of the peritoneal dialysate and the discharge from exit-site revealed *Agromyces species*, which was susceptible to penicillin, meropenem, imipenem, vancomycin, but resistant to ceftriaxone. Thus, we changed antibiotics to intraperitoneal vancomycin and meropenem on the 5^{th} day. Despite the intraperitoneal antibiotics for 4 days, the patient's abdominal pain persisted and the WBC count of the peritoneal effluents became elevated to 1368/mm^3. Therefore, we decided to remove the Tenckhoff catheter and the patient was switched to hemodialysis on the 9^{th} day. The culture of the PD catheter tip was negative. Vancomycin and imipenem was continued for another two

weeks and the patient's clinical condition improved. The patient has been maintained on hemodialysis after catheter removal.

Conclusion: In summary, we report a case of PD-associated peritonitis caused by *A. mediolanus* that was cured after PD catheter removal and intravenous antibiotic therapy. The identification of *A. mediolanus* was performed by matrix-assisted laser desorption ionization-time of flight mass spectrometry

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