

# Morganella Morganii - A Rare Cause of Continuous Ambulatory Peritoneal Dialysis Peritonitis

## *Morganella Morganii - Sürekli Ayaktan Periton Diyaliz Hastalarında Peritonitin Nadir Bir Nedeni*

### ABSTRACT

Nephrology professionals have selected continuous ambulatory peritoneal dialysis (CAPD) as the best initial therapy for patients who have chronic renal failure. Among complications, peritonitis continues to be one of the most important complications of CAPD. The typical spectrum of organisms causing peritonitis include Gram-positives (67%), Gram-negative rods (28%), fungi (2.5%), and anaerobics (2.5%). Among Gram-negative bacterial species, *Escherichia coli*, *Acinetobacter* species, and *Enterobacter* are the most seen pathogens. In this report, we present a case of CAPD peritonitis due to *Morganella morganii*. To our knowledge, this presentation is the second report of CAPD peritonitis due to *M. morganii*.

**KEY WORDS:** *Morganella morganii*, Continuous ambulatory peritoneal dialysis, Peritonitis

### ÖZ

Nefroloji uzmanları, kronik böbrek yetmezlikli hastalarında en iyi başlangıç tedavisi olarak sürekli ayaktan periton diyalizi (SAPD) tedavisi başlamayı seçerler. SAPD komplikasyonları arasında en önemlisi peritonitlerdir. Peritonite neden olan organizmalar arasında tipik spektrum; Gram-pozitifler (%67), Gram-negatif çomaklar (%28), mantarlar (%2,5) ve anaeroblardır (%2,5). Gram-negatif bakterilerden, *Escherichia coli*, *Acinetobacter*, ve *Enterobacter* en sık görülen patojenlerdir. Bu yazıda biz *Morganella morganii* nedenli SAPD peritonitini sunduk. Bilgilerimize göre bu bildiri *Morganella morganii* nedenli ikinci SAPD peritonit olgu sunumudur.

**ANAHTAR SÖZCÜKLER:** *Morganella morganii*, Sürekli ayaktan periton diyalizi, Peritonit

### INTRODUCTION

Nephrology professionals have selected continuous ambulatory peritoneal dialysis (CAPD) as the best initial therapy for patients who have chronic renal failure (1). Among complications, peritonitis continues to be one of the most important complications of CAPD. Although less than 4% of peritonitis episodes result in death, peritonitis is a “contributing factor” to death in 16% of deaths from PD. In addition, Peritonitis remains a major cause of patients discontinuing PD and switching to hemodialysis (2).

Rates of admission for bacteremia/septicemia and the adjusted risk of death from septicemia are almost 2 times lower in PD patients as compared with hemodialysis patients (3). The typical spectrum of organisms causing peritonitis include Gram-positives (67%), Gram-negative rods (28%), fungi (2.5%), or anaerobics (2.5%) (4). Among Gram-negative bacterial species, *Escherichia coli*, *Acinetobacter species*, and *Enterobacter* are the most common pathogens (5). In this report, we present a case of CAPD peritonitis due to *Morganella morganii*. To our knowledge, this presentation is the second report of CAPD peritonitis due to *M. morganii*.

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## CASE REPORT

A 66-year-old female with chronic renal failure was admitted to the inpatient clinic with complaints of fever, diffuse abdominal pain and cloudy peritoneal dialysate. The underlying cause of her renal failure was Diabetes Mellitus and she was being treated with continuous ambulatory peritoneal dialysis for the last 6 months after 6 years of hemodialysis treatment. Her exchanges were performed by her relatives. She had no history of peritonitis. On physical examination, fever was 38.6°C. Hypotension was present (90/60 mmHg) and the clinical status was consistent with circulatory failure. Laboratory data included a HGB of 19.6 g, leucocyte count of 6600/mm<sup>3</sup> with 80.5% neutrophils, and CRP of 115mg/L. The peritoneal fluid contained 1000 leucocyte/mm<sup>3</sup> with 100% neutrophils. She was started on empiric antibiotic treatment consisting of cefazolin and ceftazidime intraperitoneally (IP). Inotropic agent infusion was also started. Gram stain of peritoneal fluid revealed Gram-negative rods. On the third day of admission, *Morganella morganii* was identified from the peritoneal dialysate culture. Susceptibility tests showed susceptibility to Ceftazidime. The Tenckhoff catheter was not removed. Peritoneal effluent cell counts decreased to 30 WBCs/mm<sup>3</sup> by day five. The therapy was continued for two weeks. During her hospital stay, the patient's physical findings gradually improved. The clinical response was successful and culture of peritoneal dialysate was negative after five days of treatment.

## DISCUSSION

*Morganella morganii* is a Gram-negative facultative anaerobic rod that resides in human colonic mucosa as a part of the normal flora. It is well known that it may cause an opportunistic infection, especially in an immunocompromised host. The majority of *M. morganii* infections are related to postoperative wound infections and urinary tract infections (6,7). In addition, it is rarely isolated from infections of other body sites such as the central nervous system, bone and joint infections, and bacteraemia due to biliary and hepatic diseases (8-10). Mortality due to *M. morganii* has been associated with diabetes mellitus, polymicrobial bacteremia, and inappropriate antibiotic treatment (11).

Peritonitis due to *M. morganii* in CAPD patients is extremely rare. To our knowledge, the first and only case of peritonitis due to *M. morganii* was reported by Atalay and co-workers in 2010 (12). The most important difference between their case and ours was the variation in the number of bacteria isolated in culture. Their case was polymicrobial in fashion. They isolated *Providencia rettgeri* together with *M. morganii*. However, in the present case there was monomicrobial peritonitis due to *M. morganii*. Also our antibacterial regimen was different from theirs. Their initial anti-bacterial regimen included cefoperazone 1g twice daily intravenously and vancomycin 1g per week IP, and after the culture results it was changed to imipenem 250 mg

twice daily IP and amikacin 100mg daily IP (12). In our case our initial anti-bacterial regimen included cefazolin and ceftazidime IP but after the culture results it was changed to only ceftazidime IP.

In conclusion, *M. morganii* is not a common cause of peritoneal infections. It can be successfully treated with intraperitoneal antimicrobials without removal of the Tenckhoff catheter.

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