

# Peritonitis after Colonoscopy in a Peritoneal Dialysis Patient

## *Periton Diyalizi Hastasında Kolonoskopi Sonrası Gelişen Peritonit*

### ABSTRACT

Peritonitis in peritoneal dialysis patients after colonoscopy is a rare complication. We present a peritoneal dialysis patient who developed peritonitis shortly after colonoscopy together with a discussion on diagnosis, management and the current literature.

**KEY WORDS:** Peritoneal dialysis, Colonoscopy, Peritonitis

### ÖZ

Periton diyalizi hastalarında kolonoskopi sonrası peritonit gelişimi nadir bir durumdur. Biz burada sürekli ayaktan periton diyalizi tedavisi gören bir hastada kolonoskopi sonrası gelişen peritoniti ve bunun başarılı tedavisini sunuyoruz.

**ANAHTAR SÖZCÜKLER:** Periton diyalizi, Kolonoskopi, Peritonit

### INTRODUCTION

Peritonitis and exit-site infections are among major complications of peritoneal dialysis (PD) patients (1). Peritonitis is the most common cause of hospitalizations in these patients and corresponds to 1-6% of the deaths (2). It usually presents with abdominal pain and cloudy dialysate but the patient can also have isolated abdominal pain. Cloudy dialysate is indicative of peritonitis unless proven otherwise. A cell count of  $>100/\text{mm}^3$  and  $>50\%$  neutrophils in the dialysate is considered as peritonitis. First or third generation antibiotics should be empirically prescribed in these patients.

Colonoscopy is a relatively safe procedure. Minor symptoms such as abdominal pain, cramps, flatus, distension, headache and dizziness can be observed after colonoscopy. However, a minority of the cases face major complications such as massive bleeding or perforation which may end-up being fatal. Although minor complications are mostly overlooked, they also lead to socioeconomic problems.

Peritonitis after colonoscopy has been previously reported in CAPD patients (3, 4). Furthermore, the International Society for Peritoneal Dialysis (ISPD) has suggested to use prophylactic antibiotics before colonoscopy and polypectomy (5). However, this has not gained a wide acceptance.

In this manuscript, we report a rare cause of peritonitis in a PD patient after colonoscopy and provide data on diagnosis and management together with a discussion of the current literature.

### CASE

A 53-year-old PD patient presented at our PD unit with persistent constipation, fever and cloudy dialysate 3 days after a colonoscopy procedure. His past history revealed end-stage renal disease due to hypertension and he had been on PD therapy for the last 1.5 months. He was hepatitis B positive and C negative. He also underwent upper gastrointestinal endoscopy for dyspeptic symptoms. He had antral gastritis on endoscopy and normal findings on colonoscopy.

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Received : 24.05.2011

Accepted : 20.07.2011

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At the initial visit, his blood pressure was normal (100/70 mmHg), body temperature 38.5° C and pulse rate 92 beats per minute. He had generalized tenderness on abdominal examination. His laboratory findings were: urea 126 mg/dl, creatinine 8.9 mg/dl, albumin 3.1 g/dl, sodium 136.4 mEq/l, potassium 3.8 mEq/l, white blood cell count 7.900/mm<sup>3</sup>, hemoglobin 10.1 gr/dl, hematocrit 29.7% and hs-CRP 32.6 mg/dl (normal: 0-5 mg/dl). Abdominal X-ray in the upright position was normal. Dialysate cell count revealed 5300 cells, of which 85% were neutrophils. Culture sampling was performed and empirical intraperitoneal cefazolin (1 gr/day) and ceftazidime (1 gr/day) were initiated. *Escherichia coli*, sensitive to the above drugs, was isolated from the culture. His clinical status improved and his culture samples were negative after day 3. Treatment was continued until day 21 and the peritonitis successfully resolved.

### DISCUSSION

Peritonitis is still a major problem in patients undergoing peritoneal dialysis. It is associated with poor outcomes such as decreased patient and peritoneal survival. Peritonitis can be observed spontaneously or after invasive procedures such as endoscopy. In this manuscript, we present a successfully treated PD patient diagnosed with peritonitis after 3 days.

Colonoscopy is a relatively safe method if performed by an experienced physician. Adverse events may seldom be observed. In the PD population, peritonitis may develop after diagnostic or interventional colonoscopy and may be higher compared to other populations. However, data on this issue is not clear. In a study by Yip et al, 6.3% of the 77 PD patients developed peritonitis in 99 flexible colonoscopy procedures (4). It is suggested that invasive procedures such as biopsy or polypectomy during colonoscopy increases the risk of developing peritonitis. Also, glucose-based solutions used in PD patients impair local defense mechanisms, lead to cytokine release and decreased number of functional macrophages and eventually a tendency for infection. After colonoscopy, bacterial translocation may occur from mesenteric lymph nodes to the portal circulation and ultimately cause systemic bacteremia and peritonitis after a colonoscopy. Of notice, bacteremia has been reported at an incidence ranging from 0% to 27% after colonoscopy (6).

The 2005 ISPD guideline has suggested empirical 1 gram ampicillin or aminoglycoside with or without metranidazole before colonoscopy (5). A similar suggestion was made by the Dutch Federation of Nephrology with the addition of a dialysate drainage before the procedure (7). However, these suggestions have not gained wide acceptance. Contrary to the suggestions above, the American Society for Gastrointestinal Endoscopy and the British Society of Gastroenterology do not suggest prophylactic antibiotics before colonoscopy (8, 9). There exists a lack of consensus on this issue. Future clinical studies on this topic may help to clear this problem and reach a consensus.

In conclusion, peritonitis may be a minor but fatal complication in PD patients after colonoscopy. The impaired immune response in this patient population may be associated with a tendency for peritonitis. Despite a lack of consensus on prophylactic antibiotherapy, it seems to be beneficial in light of the current literature and our experience with this case.

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