***Comamonas testosteroni* Peritonitis
Secondary to Dislocated Intrauterine
Device and Laparoscopic Intervention
in a Continuous Ambulatory
Peritoneal Dialysis Patient**

Peritonitis is one of the most important problems in patients undergoing continuous ambulatory peritoneal dialysis (CAPD). Gram-positive bacteria, especially *Staphylococcus epidermidis*, are the most common cause of CAPD-related peritonitis; gram-negative bacteria and fungi are less common causes. Peritonitis can be successfully treated with antibiotics given by the intravenous or intraperitoneal route (1,2).

Comamonas testosteroni is a gram-negative, non-glucose-fermenting, non-spore-forming motile aerobic bacillus that is found in soil, water, and animals.

C. testosteroni can be found in intravenous catheters (3), the respiratory tract (4), the abdomen and urinary system (3,5), and the central nervous system (6). Here, we present a *C. testosteroni*-associated peritonitis in a CAPD patient with a history of laparoscopy because of dislocation of an intrauterine device to the space between the peritoneum and the anterior abdominal wall.

CASE DESCRIPTION

A 29-year-old woman was admitted to our hospital for abdominal pain, nausea, and vomiting. She had end-stage renal failure secondary to hypertensive nephrosclerosis, and she had been treated with CAPD for 10 months. This patient had a history of a laparoscopic surgical procedure for removal of an intrauterine device from the space between the peritoneum and the anterior abdominal wall 1 week earlier.

On physical examination, blood pressure was 110/70 mmHg, pulse was 92 bpm, and abdominal tenderness was evident. Effluent contained leukocytes ($600/\text{mm}^3$). Blood tests showed a white blood cell count of $7400/\text{mm}^3$ (79.1% neutrophils), an erythrocyte sedimentation rate of 79 mm/h, and procalcitonin 2.31 ng/mL (normal range: 0 – 0.5 ng/mL).

Intravenous vancomycin and oral ciprofloxacin were given empirically. On hospital day 2, the patient was well, with signs and symptoms of peritonitis regressing. On hospital day 3, culture results showed *C. testosteroni* in effluent; blood and urine cultures were negative. Vancomycin was interrupted, and the patient was treated with single-agent ciprofloxacin for 14 days. The leukocyte count in effluent dropped to $350/\text{mm}^3$, $200/\text{mm}^3$, $50/\text{mm}^3$, and $80/\text{mm}^3$ on the 4th, 8th, and 14th days respectively (Table 1). Control cultures were negative.

DISCUSSION

Peritonitis is the most important complication of peritoneal dialysis, and despite advances in technology, peritonitis is reported to occur every 12 – 18 months in CAPD patients (1,2). Gram-positive bacteria are the organisms most commonly isolated in these cases, but gram-negative micro-organisms may also be a causative factor. Gram-negative peritonitis may develop secondary to perforation of intra-abdominal organs or because of gynecologic problems or procedures.

C. testosteroni, an organism belonging to the *Comamonadaceae* family (1), was classified in 1987 after studies of the genetics of *Pseudomonas aeruginosa*. It is found in various environments, including soil, water, plants, and animals. It has also been isolated in

TABLE 1
White Blood Cell Counts in Blood and Effluent Before and After Treatment

Day	Count/ mm^3		Procalcitonin (ng/mL)
	Blood	Effluent	
0	7400	600	2.31
4	6800	350	1.8
8	6200	200	1.2
14	5300	50	0.03

hospital environments from intravenous catheters and respiratory equipment (6).

So far, 33 cases of *C. testosteroni* infection have been reported (7). Nseir *et al.* (8) reported *C. testosteroni* bacteremia with a fatal outcome in a patient undergoing hemodialysis with a central hemodialysis catheter. *C. acidovorans*-associated peritonitis has been reported in a CAPD patient (9), but *C. testosteroni*-associated peritonitis in CAPD has not been reported so far. Farshad *et al.* reported 2 patients with malignancy and *C. testosteroni* bacteremia (7).

In our case, the predisposing factor for peritonitis with *C. testosteroni* was the laparoscopic intervention or the dislocation of the intrauterine device to the abdomen. Before this event, our patient had not experienced any peritonitis. In past reports, the predisposing factors have been malignant disease, perforated appendicitis, and intravenous drug abuse, among others (7). Bacterial and fungal peritonitis secondary to an intrauterine device was previously described in 4 female CAPD patients (10–13).

CONCLUSIONS

An intrauterine device or laparoscopic intervention may increase the risk of infection in CAPD patients, and the resulting infections may be caused by unexpected micro-organisms such as *C. testosteroni*. A good patient history and application of basic treatment guidelines, such as initial antibiotic therapy aimed at both gram-negative and gram-positive micro-organisms will increase treatment success and reduce mortality. Intrauterine devices may not be safe for female patients undergoing CAPD.

DISCLOSURES

The authors declare no financial conflicts of interest.

Eda Altun*
Bülent Kaya

Onur Taktakoğlu
Refika Karaer
Saime Paydas
Mustafa Balal
Neslihan Seyrek

Cukurova University Faculty of Medicine
Department of Nephrology
Adana, Turkey

*email: dredaaltun@hotmail.com

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