Case Report

Peritonitis associated with *Strongyloides stercoralis* in a patient undergoing continuous ambulatory peritoneal dialysis

Tansu Sav¹, Ozan Yaman², Ali Ihsan Gunal¹, Oktay Oymak³ and Cengiz Utas³

¹Department of Nephrology, Kayseri State Hospital, ²Department of Parasitology and ³Department of Nephrology, Erciyes University, Turkey

Correspondence and offprint requests to: Tansu Sav; E-mail: savtansu@gmail.com

Abstract

A 67-year-old male continuous ambulatory peritoneal dialysis (CAPD) patient presented with abdominal pain and pruritus. *Strongyloides stercoralis* larvae were seen on dialysate sediment and stool microscopic examination. Albendazole was given and improved the symptoms in 4 days. There was no episode of relapsing peritonitis after the therapy. This is the first report of *S. stercoralis* peritonitis in patients on CAPD. Strongyloides should be considered as a probable peritoneal pathogen in CAPD patients.

Keywords: CAPD peritonitis; pruritus; *Strongyloides stercoralis*

Introduction

Peritonitis is very important and one of the most common complications of CAPD. CAPD peritonitis can lead to hospitalization, discontinuation of PD and death. *Strongyloides stercoralis* may cause a complicated infection in immunocompromised patients [1]. Chronic infections with *S. stercoralis* can be clinically unapparent or can lead to cutaneous, gastrointestinal or pulmonary symptoms [2]. We report the first case of CAPD-related peritonitis as an unusual presentation of *S. stercoralis* infection.

Case

A 67-year-old male patient who had been on CAPD therapy for end-stage renal disease secondary to type 2 diabetes mellitus. He had been on CAPD therapy for 3 years. He experienced two episodes of CAPD peritonitis secondary to *Enterococcus* spp and metycilline-sensitive *Staphylococcus aureus* in December 2007 and June 2008, respectively. All episodes were successfully treated with standard antibiotic therapy.

The patient presented to our hospital due to abdominal pain, tenderness, cloudy effluent and pruritus. His body temperature was 37.8°C. The abdominal examination showed diffuse abdominal tenderness and signs of peritonitis. The remaining physical examination was normal. On admission, haemogram showed white blood cell count 10.700/mm³ with 76% neutrophils and 6% eosinophils and haemoglobin 11.6 g/dL. Blood urea nitrogen was 72 mg/dL, and serum creatinine was 6.6 mg/dL. C-reactive protein was high (23.3 mg/dL). Peritoneal effluent leukocyte count was 1550/mm³ with 80% neutrophils and 10% eosinophils.

*S. stercoralis* larvae were seen on centrifuged dialysate sediment with microscopic examination (Figure 1). Stool examination was also positive for *S. stercoralis* larvae. The patient was treated with albendazole 400 mg orally for 1 month. The dialysate and stool cultures were negative. The patient's complaints disappeared and dialysate white blood cell count decreased to 100/mm³ 4 days later without a need for catheter removal. We did not detect larvae in three stool samples and treatment finished at the end of the first month. Strongyloides larva was also not detected in stool samples 2 months after the therapy.

Discussion

Strongyloidosis is a parasitic infection caused by *S. stercoralis*. This nematode infects mammals, birds, reptiles and amphibians. *S. stercoralis* can cause a hyperinfection syndrome and disseminated infection several years after exposure. The most common risk factor for these complications is immunosuppression. Chronic infection by *S. stercoralis* is usually limited to the duodenum and upper jejunum. Some rhabdoid larvae may transform back into filariform larvae and penetrate either the colonic mucosa (intestinal autoinfection) or the perianal skin (external autoinfection), allowing the internal life cycle leading to small intestinal infection to continue [3]. Involvement of the colon has been well described in association with disseminated *S. stercoralis*. The parasite was discovered in the wall of the colon during autopsies [4,5]. The most revealing symptom of chronic strongyloidosis is urticaria. This sign is characteristic for strongyloidosis. Transient and pruritic dermatitis...
Peritonitis associated with *Strongyloides stercoralis* in a patient undergoing CAPD

In our patient, strongyloides peritonitis may have occurred due to transmigration of parasite across the bowel wall. Alternatively, the entrance of parasite into the peritoneal cavity is also possible via touch contamination of the catheter during an exchange. Our findings suggest that *S. stercoralis* may cause the development of CAPD peritonitis and pruritus might be the sign of this infection.

**Conflict of interest statement.** None declared.

**References**

1. Naesch R, Zimmerli L, Stockli R et al. Imported strongyloidosis: a longitudinal analysis of 31 cases. *J Travel Med* 2005; 12: 80–84
2. Siddiqui AA, Berk SL. Diagnosis of *Strongyloides stercoralis* infection. *Clin Infect Dis* 2001; 33: 1040–1047
3. Grove DI. Strongyloidiasis: a conundrum for gastroenterologists. *Gut* 1994; 35: 437–440
4. De Goede E, Martens M, Van Rooy S et al. A case of systemic strongyloidiasis in an ex-coal miner with idiopathic colitis. *Eur J Gastroenterol Hepatol* 1995; 7: 807–809
5. Civantos F, Robinson MJ. Fatal strongyloidiasis following corticosteroid therapy. *Am J Dig Dis* 1969; 14: 643–651
6. Grove DI. Strongyloidiasis in allied ex-prisoners of war in south–east Asia. *Br Med J* 1980; 280: 598–601
7. Pelletier Jr. LL. Chronic strongyloidiasis in World War II Far East ex-prisoners of war. *Am J Trop Med Hyg* 1984; 33: 55–61
8. Milder JE, Walzer PD, Kilgore G et al. Clinical features of *Strongyloides stercoralis* infection in an endemic area of the United States. *Gastroenterology* 1981; 80: 1481–1488
9. Genta RM. Predictive value of an enzyme-linked immunosorbent assay (ELISA) for the serodiagnosis of strongyloidiasis. *Am J Clin Pathol* 1988; 89: 391–394

Received for publication: 23.3.09; Accepted in revised form: 18.6.09