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Case Report

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

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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/mm^3 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/mm^3 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 patients' complaints disappeared and dialysate white blood cell count decreased to 100/mm^3 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 (internal 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

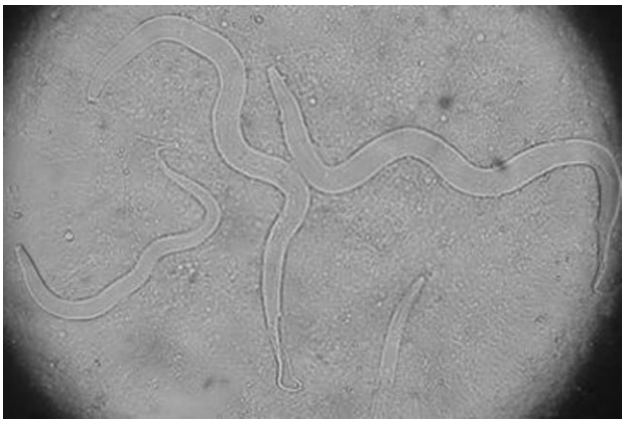

Fig. 1. *Strongyloides stercoralis* larvae in dialysate.

is caused by the intradermal migration of the larvae in the skin. The other symptoms are abdominal pain, diarrhoea, cough and anorexia [6–8]. Strongyloides infections can be detected by the examination of host faeces for strongyloides larvae or by the examination of the small intestine of a host for parasitic females. The sensitivity of this procedure is disappointingly low [7]. ELISA tests for detecting serum IgG against antigens of *S. stercoralis* may also use for strongyloidosis [9]. Treatment options for uncomplicated disease include thiabendazole, ivermectin and albendazole. Response to anthelmintic therapy was defined as the disappearance of parasites in three stool samples performed at least 6 weeks after therapy [1].

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.

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