Cyclospora Oocysts and *Entamoeba histolytica* Adhesin Antigen Positivity in a Patient with Diarrhea: Case Report

Diyareli bir Hastada *Cyclospora* Ookistlerinin ve *Entamoeba histolytica* Adhezin Antijenlerinin Birlikteliği

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ABSTRACT *Cyclospora cayetanesis* is a pathogenic protozoan characterized with prolonged diarrhea in immunocompetent and immunocompromised patients. Despite its ubiqutous distribution, reports on this parasite from Turkey are scarce. Our case is a 28 years old patient, a nurse, who presented to the emergency department in June 2009 with diarrhea, nausea and vomiting during the last week. The stool specimen examination by Kinyoun's acid-fast stain revealed *Cyclospora* oocysts. Adhesin antigen of *Entamoeba histolytica* was also positive. The patient was treated with a combination of trimethoprim/sulfamethoxazole and ornidazol and she fully recovered. The literature was reviewed and our case proved to be the first report on the coexistance of *Cyclospora* oocysts and *Entamoeba histolytica* adhesin antigen in a diarrheic patient. This case underlines the importance of screening for parasites in patients with diarrhea.

Key Words: *Cyclosporiasis;* diarrhea; emergency medical services

ÖZET *Cyclospora cayetanesis*, bağışıklığı yeterli ve bağışıklığı baskılanmış hastalarda uzamış diyare ile seyreden patojen bir protozoondur. Dünyada yaygın bulunmasına rağmen, ülkemizde bununla ilgili sadece birkaç rapor bildirilmiştir. Sunulan olgu, Haziran 2009'da hastanenin acil servisine bir haftadır devam eden diyare, bulantı ve kusma şikayetleri ile başvuran 28 yaşında bir hemşiredir. Hastadan alınan dışkı örneğinde Kinyoun asidorezistan boyama yöntemi ile *Cyclospora* ookistleri saptandı. Ayrıca, *Entamoeba histolytica*'nın adhezin antijeni de pozitif bulundu. Hasta trimetoprim/sulfometoksazol ve ornidazol kombinasyonu ile tedavi edildi ve tamamen iyileşti. Literatür gözden geçirildi ve olgumuzun, literatürde, diyareli bir hastada *Cyclospora* ookistlerinin ve *Entamoeba histolytica* adhezin antijeninin aynı anda gösterildiği ilk rapor olduğu anlaşıldı. Bu olgu, diyareli hastalarda parazitlerin varlığını araştırmanın öneminin altını çizmektedir.

Anahtar Kelimeler: Siklosporiyazis; ishal; acil tıbbi servisler

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Cyclospora cayetanensis is a parasite that can cause diarrhea in both immunocompetent and immunocompromised individuals. The parasite is transmitted through contaminated water and food.[1] Due to its excystation and sporification characteristics, the agent was classified and placed under *Coccidia* subclass of apicomplexa in 1993.[1]

The most characteristic feature of *Cyclospora* settled especially in the jejenum is persistant and prolonged watery diarrhea, 6-8 times daily, linked with weight loss. Symptoms may include fatigue, loss of appetite, muscle

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aches, nausea and abdominal cramps. The agent is diagnosed with microscopic detection of the oocysts stained with acid-fast stains.

A number of publications from different parts of the world reported the prevalance of the parasite in humans.[2-10] In 1998, the first report about this parasite in the Turkish literature was published. By this time, only few cases were reported and our case is the first one from our region. *Cyclospora* should be considered as a causative agent in a patient with diarrhea. This is also the first report showing the coexistance of *Cyclospora* sp. with *E. histolytica* in an immunocompetent person.

CASE REPORT

A 28 years old female patient presented to the emergency department with persistant watery diarrhea with up to 6-8 bowel movements per day, abdominal pain, nausea, vomiting and fatigue. The complaints had started one week before and she did not get any medical treatment. Her physical examination revealed increased bowel sounds. Laboratory findings were as follows: White blood cell count 6.900/mm^3, platelets 319000/ml, C-reactive protein 16 mg/L, aspartam aminotransferase 53 U/L, alanine aminotransferase 99 U/L. Stool sample examination with Kinyoun's acid-fast stain under light microscope revealed *Cyclospora* oocysts (Figure 1, Figure 2).

Despite the nonexistance of E. histolytica by Trichrome and Kinyoun's acid fast stains, the patient's stool specimen was examined by enzyme-linked immunoassay (WAMPOLE E. histolytica 2 ELISA TechLab) for *E. histolytica* antigen, which turned out to be positive. The patient was treated with trimethoprim-sulfamethoxazole and ornidazole and was completely asymptomatic at the follow up visit after 7 days.

DISCUSSION

Oocysts of *Cyclospora* species can live resistantly on food, water and outer atmosphere and may remain infective for a long time, causing a significant risk for infection.[1] Studies from different countries have reported infection with this protozoon in immunocompetent and immunocompromised individuals. In a study in Venezuella, *Cyclospora* oocysts were positive in 9.8% of 71 AIDS patients and 5.3% of 132 children with diarrhea.[2] Alakpa et al. found only one diarrhea in 11 cases with *C. cayetanensis* out of 1109 stool samples.[3] Neither study showed an association of *Cyclospora* sp. with *E. histolytica* in positive cases. In Jordan, Nimri et al. found oocysts in 6% of stool samples collected from 200 individuals with diarrhea and reported that the majority of the cases occured in late April and May.[4]

In our country, the presence of this protozoon in patients with AIDS was first reported by Koç and

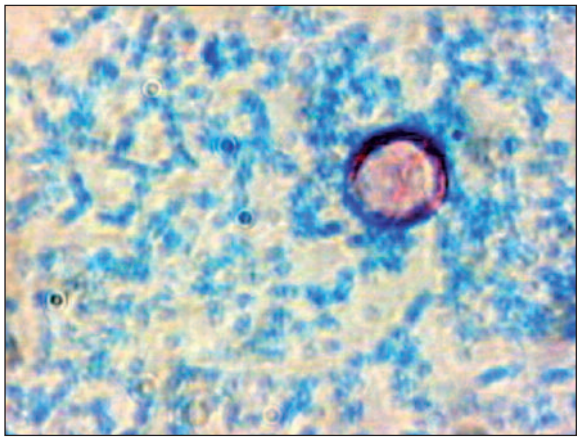

FIGURE 1: *Cyclospora* sp. Oocyst stained with Kinyoun's acid-fast method (x1000).
(See for colored form http://tipbilimleri.turkiyeklinikleri.com/)

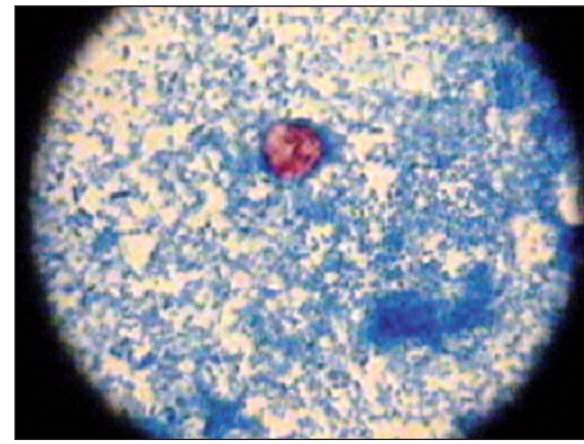

FIGURE 2: *Cyclospora* sp. oocyst. Preperation stained with Kinyoun's acid-fast method (x1000).
(See for colored form http://tipbilimleri.turkiyeklinikleri.com/)

colleagues, where a 50 years old female had chronic vomiting, diarrhea and fever periodically for a year.[5] Turk and colleagues reported the presence of the parasite in a 30 years old female patient who was not immunocompromised.[6] In a research carried out in the western part of Turkey, 4660 immunocompetent patients and 326 immunocompromised cases were screened for the parasite and 23 samples, most of which were seasonal or in summer months, were positive for *Cyclospora*. Although in 5 samples *Cyclospora* were accompanied by other parasites, *E. histolytica* was not detected.[7]

Cyclospora species may play a role in diarrhea patients with travel history. Turgay et al. found oocytsts in a male patient who had a travel history. *Blastocytis hominis, Entamoeba coli* cysts and *Trichomonas intestinalis* trophozoites were also detected in the stool sample of the patient using saline iodine method and tricrome staining.[8] Three diarrhea cases from Kayseri caused by *C. cayetanensis* were published. They were reported in summer months and had temporal similarities with the case, which we diagnosed in July.[9]

In our case, *E. histolytica* adhesin antigen was also positive. Diagnosis of amoebiosis is difficult. Microscopic examination may not enable the differentiation of pathogenic *E. histolytica* and non-pathogenic *E. dispar*. Through adhesin antigen detection, the distinction can be done easily and rapidly.[10,11] There is no other case in the literature showing the coexistance of *Cyclospora* sp. and *E. histolytica*. Therefore, this may be considered the first case with both *Cyclospora* oocysts and E. histolytica adhesin antigen.

CONCLUSION

Diarrhea patients make up a significant proportion of those admitted to emergency departments. It is important to consider protozoons and especially *C. cayetanensis* causative pathogens in those patients.

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