

CASE REPORT

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Patient with Blastocystis Hominis Associated with Unelucidated Pathogenicity Case Report

Aydınlatılmamış Patojenite ile İlişkili Blastocystis Hominis’li Hasta Olgu Sunumu

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ABSTRACT

Objective: Blastocystis hominis is one of the parasites that found commonly in the human intestinal tract. It has been described as a non-pathogenic protozoan parasite, even if it has been claimed to cause intestinal diseases for many years. Therefore, the role and treatment of the parasite in forming the symptoms of the gastrointestinal system are controversial. There may be clinical symptoms such as non-specific abdominal pain, diarrhea, anorexia, vomiting and weight loss, and sometimes it can be manifested in an invasive table, such as rare symptoms like rectal bleeding.

Case: In this report, we present Blastocystis hominis in stool examination of our patient who was admitted to our clinic with non-specific gastrointestinal symptoms for approximately one month. Metronidazole therapy for this parasitic infection was initiated and was observed to recover in the patient’s clinic.

Conclusion: We want to report that Blastocystis hominis, which has been exposed to many different definitions in the past, provides additional support for its recognition as a human pathogen with this case report.

Keywords: Blastocystis Hominis, Stool, İnfection, Parasite, Pathogenicity.

ÖZET

Giriş: Blastocystis hominis insan bağırsak sisteminde yaygın olarak bulunan parazitlerden biridir. Uzun yıllar boyunca bağırsak hastalıklarına neden olabileceği iddia edildiyse bile patojenik olmayan protozoan bir parazit olarak tarif edilmiştir. Bu yüzden parazitin gastrointestinal sistem semptomlarını oluşturmadaki rolü ve tedavisi tartışmalıdır. Klinik olarak spesifik olmayan karın ağrısı, sulu ishal, anoreksi, kusma ve kilo kaybı gibi semptomlar olabileceği gibi nadirde olsa rektal kanama gibi invaziv bir tablo halinde kendini gösterebilmektedir.

Olgu: Bu yazımızda diyabetes mellitus tanılı yaklaşık bir aydır spesifik olmayan gastrointestinal semptomlar ile polikliniğimize başvuran hastanın gaita tetkik incelemesinde blastocystis hominis’in varlığı tespit edildi. Bu paraziter enfeksiyona yönelik metronidazol tedavisi başlanan hastanın kliniğinde düzelmeye gözlemlendi.

Sonuç: Geçmişte birçok farklı tanımlamalara maruz kalan blastocystis hominis’in bu olgu sunumu ile insan patojeni olarak tanınmasına ek bir destek olduğunu bildirmek istedik.

Anahtar Kelimeler: Blastocystis Hominis, Gaita, İnfeksiyon, Parazit, Patojenite.

INTRODUCTION

Blastocystis hominis, first described as a yeast fungus by Alexeie in 1911, is a parasite commonly found in the human intestinal tract. This protozoan, which was considered harmless for a long time, was classified by Zierdt as a cyst form of flagellates and thought to be related to yeasts (1). Zierdt described various forms of this pathogen in 1967 about Blastocystis hominis, which is more common in tropical and subtropical countries and widespread all over the world. After this period, many clinical and experimental studies have been reported (2).

The infection, which is more common in developing countries, is transmitted via fecal-oral route. Infection is usually asymptomatic. In symptomatic cases, diarrhea, abdominal pain, nausea, vomiting, fever, bloating, weight loss, leukocytes in stool, rectal bleeding, eosinophilia and anemia may be observed (3-5).

In addition to routine stool examination, various techniques are also used in the diagnosis of infection (6). For many years, there have been discussions about its pathogenicity, gastrointestinal system symptoms and its treatment (3-5, 7). Therefore, we wanted to emphasize that the approach to patients

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with *Blastocystis hominis*, which has a high potential to present with different cases, is important in terms of diagnosis and treatment process. Informed consent form was obtained from the patient.

CASE

A 63-year-old man presented to our outpatient clinic with complaints of nausea, vomiting, fever (38°C), anorexia, weight loss and diarrhea. He had a history of watery, bloody and mucous stools 6 times a day for a month and described an involuntary weight loss of approximately 5 kg. He stated that these complaints were occasionally accompanied by abdominal pain and that he did not receive any treatment for this condition. The patient was a non-smoker and alcohol abstainer and had no history of any disease except type 2 diabetes mellitus. There was no additional pathology in his family history and he was not taking any medication other than anti-diabetic agents. On physical examination, general condition was good, vitals were stable, body mass index was 31 kg/m² with moderate dehydration findings. No pathologic findings were found except for increased bowel sounds in all four quadrants of the abdomen. Laboratory results; Hemoglobin (HGB): 10.9 g/dL, Leukocyte (WBC): 17.3x10³/uL, Platelet count (PLT): 394x10³/uL, Urea: 78 mg/dL, creatinine (Cr): 1.64 mg/dL, sodium (Na): 130 mmol/L, Alanine aminotransferase (ALT): 50 IU/L, Aspartate aminotransferase (AST): 61 IU/L, Gamma glutamyl transferase (GGT): 62 IU/L, sedimentation 103 mm/h, C-reactive protein 207 mg/L, no pathologic findings were found. Fecal occult blood test was negative and direct microscopic, lugol and trichrome staining of the stool revealed more than 5 vacuolar *Blastocystis hominis* cysts in each immersion area. No other accompanying protozoa were detected. Stool culture was compatible with normal flora and starch, protein and fat digestion tests were normal. The patient was treated with metronidazole for 14 days and his complaints improved and no *Blastocystis hominis* cyst and other gastrointestinal pathogens were found in the control stool panel examination.

DISCUSSION

Brumpt reported *Blastocystis hominis* as a harmless intestinal parasite for the first time and subsequently this microorganism was observed in human intestinal flora. However, its development, colonization in the intestine and pathogenic potential have not been clearly elucidated (7,8). *Blastocystis hominis* infection can occur in both children and adults. It is observed with a rate of 30-50% in developing countries and 1.5-10% in developed countries. Transmission to humans is via fecal-oral route. However, this has not been experimentally confirmed (9). Fecal-oral transmission is thought to be water-food borne or by direct human-to-human transmission. The fact that no difference was found in scans performed in symptomatic and asymptomatic individuals suggested the presence of asymptomatic carriage (10). While the infection mostly proceeds asymptomatic, it may cause symptoms in severe cases. However, the role of this parasite in gastrointestinal symptoms is constantly discussed. In our patient who had no previous complaints, onset of diarrhea after severe abdominal pain and nausea were the main clinical symptoms.

Clinical findings include diarrhea or abdominal pain with specific symptoms such as nausea, vomiting, anorexia, weight loss and fever (10). The diagnosis is made by observation of the vacuolar form of the organism on light microscopic examination of the fecal sample. As a result of investigations, cystic, avacuolar and multivacuolar forms have been added to vacuolar, granular and ameboid forms, but the form responsible for transmission has not been determined (11). In addition, in the absence of other intestinal pathogens, the presence of more than 5 causative agents at each magnification in microscopic examinations should be considered in favor of the disease. Although the culture method is superior to direct examination, it is not routinely used (11).

There are also some doubts about treatment. Although metranidazole is primarily recommended in treatment, cases resistant to metranidazole have also been reported (11). Many drugs have been tested in vitro in the treatment of infection and trimethoprim/sulfamethoxazole, metronidazole, iodoquinol, furazolidone and tinidazole are used in the clinic. In mild infections as well as in severe infections, drugs do not provide recovery in all patients (12).

When the literature is examined, there is a lack of consensus on the pathogenicity of *Blastocystis hominis* infection in humans and the lack of standardized diagnostic criteria; therefore, controversy continues

regarding its treatment. We believe that this case report will contribute to the definition of the human pathogenicity of this parasite.

CONCLUSION

In conclusion, stool panel examination and Blastocystis hominis should be considered in patients presenting with non-specific symptoms of the gastrointestinal tract, especially in cases with increased complaints after food consumption. Blastocystis hominis agent detected intensively should be reported by microbiologists and the physician should be informed. We believe that this case report is an additional support for the recognition of this parasite as a human pathogen, which has received many different definitions in the past.

DESCRIPTIONS

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REFERENCES

1. Tan KS, Singh M, Yap EH. Recent advances in Blastocystis hominis research: hot spots in terra incognita. *Int J Parasitol.* 2002;32(7): 789-804.
2. Zierdt CH. Blastocystis hominis--past and future. *Clin Microbiol Rev.* 1991; 4(1): 61-79.
3. Garcia LS, Bruekner DA. *Diagnostic Medical Parasitology.* Third Edition, Washington DC: ASM Pres. 1997: 28-31.
4. Saygı G. *Temel Tıbbi Parazitoloji.* 2. baskı, Sivas: EsForm Ofset Ltd. Şti, 2002: 102-103.
5. Unat EK, Yücel A, Altaş K, Samastı M. Unat'ın Tıp Parazitolojisi. İnsanım Ökaryonlu Parazitleri ve Bunlarla Oluşan Hastalıkları. 5. baskı, İstanbul: İstanbul Üniversitesi Cerrahpaşa Tıp Fakültesi Vakfı Yayınları. 1995: 678-680.
6. Ashford RW, Atkinson EA. Epidemiology of Blastocystis hominis infection in Papua New Guinea: age-prevalence and associations with other parasites. *Ann Trop Med Parasitol.* 1992; 86: 129-136.
7. Moghaddam DD, Ghadirian E, Azami M. Blastocystis hominis and the evaluation of efficacy of metronidazole and trimethoprim/sulfamethoxazole. *Parasitol Res.* 2005; 96: 273-275.
8. Horikı N, Kaneda Y, Maruyama M, Fujita Y, Tachibana H. Intestinal blockage by carcinoma and Blastocystis Hominis infection. *Am J Trop Med Hyg.* 1999; 60:400-2.
9. Suresh K, Smith H. Comparison of methods for detecting Blastocystis hominis. *Eur J Clin Microbiol Infect Dis.* 2004; 23: 509-511.
10. Leder K, Hellard ME, Sinclair MI, Fairley CK, Wolfe R. No correlation between clinical symptoms and Blastocystis hominis in immunocompetent individuals. *J Gastroenterol Hepatol.* 2005; 20:1390-4.
11. Yakoob J, Jafri W, Jafri N et al. Irritable bowel syndrome: in search of an etiology: role of Blastocystis hominis. *Am J Trop Med Hyg.* 2004; 70:383-5
12. Tan TC, Suresh KG. Predominance of amoeboid forms of Blastocystis hominis in isolates from symptomatic patients. *Parasitol Res.* 2006; 98: 189-193.