CLINICAL VIGNETTE

The Significance of Blastocystis species in a Patient with Gastrointestinal Symptoms

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Introduction

Blastocystis species, previously known as *Blastocystis hominis* and considered a harmless yeast, was recategorized as an anaerobic protozoan parasite in 1967 and has since remained a controversial microbe. Commonly found in the human gastrointestinal tract of asymptomatic individuals, it has also been implicated in diarrheal illness and is notably more common in developing countries. With both foodborne and zoonotic transmission, as well as an exceptional degree of genetic variety, it has been difficult to determine the relationship between this common bacteria and its role as either part of the normal gastrointestinal flora or as a human pathogen. Here is a 25-year-old woman with gastrointestinal symptoms and stool studies positive for *Blastocystis* spp.

Case Report

An otherwise healthy 25-year-old female presented to a primary care with a several year history of intermittent bloating, gas, bilateral lower quadrant abdominal pain, and abdominal distention with development of daily diarrhea in the previous two months. She reported worsening symptoms with certain foods but no alleviating factors and no associated vomiting, fevers, melena, or weight changes. Physical examination revealed temperature 37.1°C, blood pressure 105/74 mm Hg, pulse 103, and oxygen saturation 96% on room air. She was in no apparent distress, and her exam was unremarkable, including a soft nontender abdomen without distention, organomegaly or masses. Laboratory and imaging studies included normal CBC with differential, CMP, ESR, CRP, celiac testing and abdominal ultrasound. Stool studies were unremarkable except for the presence of *Blastocystis* spp on concentrated smear. The patient was treated with tinidazole 2000 mg for one dose. She returned one month later reporting improved gas and pain but ongoing diarrhea; the course of tinidazole was repeated and she did not return to clinic.

Discussion

Blastocystis spp consists of subdivisions of four structural forms and nine genetic subtypes; however, there exists no strong evidence of correlation between structure or subtype and symptomatic disease. The parasite is transmitted in a fecal-oral manner through primary cysts. Waterborne and zoonotic transmission is known to be possible but is less common. *Blastocystis* is easily seen on stool culture, PCR, or light microscopy examination with culture being the most sensitive means of detection.[1]

Symptoms commonly attributed to *Blastocystis* spp infection include diarrhea, nonspecific abdominal pain, nausea, and bloating. Urticaria, fatigue and anorexia are also reported. Laboratory findings are generally normal, and fecal leukocytes are generally absent. Endoscopic examination is typically unremarkable. Although the percentage of patients with *Blastocystis* spp on stool sample is a topic of much debate, one hospital study showed that 42.5% of patients had symptoms.[2] Furthermore, *Blastocystis* spp has been found to be more prevalent in patients with diarrhea-predominant irritable bowel syndrome compared to the general immunocompetent population.[3]

Because *Blastocystis* spp is commonly found in asymptomatic individuals, is often self-limiting, and has an erratic response to treatment, it is reasonable to defer pharmacotherapy except when patients are persistently symptomatic, and other pathogens have been eliminated. Metronidazole has been found to be effective in both improvement of diarrhea and stool clearance of *Blastocystis* spp at one month.[4] Dosage is typically 750 mg, three times daily for ten days. Tinidazole two grams once is similarly effective but often better-tolerated. Alternatives include trimethoprim-sulfamethoxazole or paromomycin.

Conclusion

In the aforementioned patient with chronic intermittent nonspecific gastrointestinal complaints, the exact cause remains unclear. However, her symptoms did improve with appropriate pharmacotherapy. Although other factors such as diet and emotional stressors may modulate symptoms, in patients with persistently symptomatic gastrointestinal complaints and *Blastocystis* spp as the only pathogen isolated on evaluation, it is reasonable to include *Blastocystis* as a possible cause and to treat accordingly.

References

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