**CLINICAL VIGNETTE**

# Diarrhea in the primary care setting: A case of *Dientamoeba fragilis*

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***Case Report***

A 44-year-old woman with prior history of oral herpes presented to urgent care with diarrhea and bloating for the past two months. The patient states she has suffered from uncomfortable bloating and generalized cramping pain and gas, which has gradually worsened. On a daily basis, she has been having voluminous and watery diarrhea, usually triggered after eating, and accompanied by urgency. Generally, bowel movements alleviate her cramping and bloating; however, she has not had a solid bowel movement in weeks. The patient tried avoiding dairy, without significant improvement in symptoms. She denies recent travel, camping or drinking from fresh water streams. No significant change in weight, nausea, vomiting, melena, or hematochezia. She has not tried any medications or treatments for her diarrhea. Interestingly, the family dog recently developed diarrhea and was diagnosed with Giardia, prompting the patient to come in for her own evaluation.

The patient has no significant past medical history aside from allergic seasonal rhinitis, oral herpes, and degenerative disc disease. She has had no surgeries or significant family history. Her only medication is valacyclovir as needed for oral herpes outbreak. The patient does not smoke, use alcohol, or engage in illicit drug use. She lives at home with her husband, two children under the age of 10 and their dog.

Vitals showed blood pressure of 123/83 mmHg, pulse 61, temperature of 36.6 C, Resp 16, weight 146 lbs (BMI 24.6). On examination, the patient was well appearing, in no apparent distress. She had anicteric sclera and pink, moist oral mucosa. Her heart exam was unremarkable, pedal pulses were 2+ and no lower extremity edema. On pulmonary examination, lungs were clear, with normal exertion. Her abdomen was soft, nontender, nondistended, with active bowel sounds. No guarding or rebound, no hepatosplenomegaly appreciated. Her skin exam was unremarkable.

Stool studies were sent. The bacterial enteric pathogen panel PCR (which includes *Salmonella* spp., *Campylobacter* spp. (*jejuni* and *coli*), *Shigella* spp. / Enteroinvasive *E. coli* (EIEC), Shiga toxin 1 (stx1) / Shiga toxin 2 (stx2) genes (found in Shiga toxin-producing *E. coli* [STEC]), as well as *Shigella dysenteriae*) was negative. Clostridium difficile PCR and giardia-cryptosporidium stool antigen were both normal. No stool WBC, RBC, or Charcot-Leyden cystals were seen. Ova and parasite examination indicated *Dientamoeba fragilis* trophozoites.

The patient was promptly started on metronidazole 500mg orally three times daily for a 10-day course, after which she experienced resolution of her symptoms.

***Discussion***

*Dientamoeba fragilis* is an enteric protozoan parasite that is found in the gastrointestinal tract of humans. They are in the family of protozoan flagellates, including *Trichomonas.*[1] Initially, they were thought to be non-pathologic, but more recently have been found to be capable of causing symptomatic illness.[2,3] The life cycle and transmission of *D. fragilis* is not entirely understood. One hypothesis however, is that *D. fragilis* is transmitted via fecal-oral route with animal hosts. A recent study by Chan et al[4] examined 420 animal stool samples from 37 distinct animal species in Sydney, Australia. Remarkably, *D. fragilis* was detected in only two animal species: dog and cat. Given the particular close relationship between humans and dogs and cats, it is suggestive that dogs and cats may potentially be sources of human infection with enteric zoonotic protozoa.[4]

*D. Fragilis* infection presentation can vary. One Swedish study showed the highest incidence to be in preschool boys.[3] *D. fragilis* generally leads to an infectious colitis with acute to chronic symptoms of abdominal pain, flatulence, and diarrhea.[3] Some studies have shown the diarrhea from *D. Fragilis* to last anywhere from 2 weeks to several years and can share many of the characteristics of irritable bowel syndrome, lactose intolerance, Giardiasis, and other parasitic infections.[3]

There are no randomized control trials evaluating treatment for *D. fragilis* infection. Metronidazole, Paromomycin, Iodoquinol, tetracycline, and doxycycline have been used in the literature.[3,5]

In our patient with 2-month history of gradually worsening bloating, cramping pain and diarrhea, further diagnostic workup was warranted. It is possible that her dog, who was recently diagnosed with Giardia, was an animal vector, as Giardia can be confused for *D. fragilis* on microscopy. PCR based assays can more readily discern Giardia from *D. fragilis*, but may not always be readily available.[4] Our advice is to consider parasitic infection, such as *D. fragilis*, in primary care patients experiencing acute to subacute symptoms of bloating, cramping, and diarrhea. *D. fragilis* should also be in your differential if your patients have close exposure to dogs and cats.

## REFERENCES


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