A 47-year-old man presented with a 10-month history of watery diarrhea and 4 previous episodes of bright red blood per rectum that had resolved on its own. He reported up to 10 bowel movements per day associated with lower abdominal pain and cramping, which is sometimes also associated with rectal bleeding. Symptoms are relieved with fasting. The diagnosis of intestinal spirochetosis is based primarily on colonoscopy and biopsy. The authors report a 47-year-old man who presented with diarrhea, cramping, and abdominal pain. Investigation via biopsy of the colon and rectosigmoid junction indicated a moderate number of spirochete organisms, revealing a diagnosis of intestinal spirochetosis.

**DISCUSSION**

The presence of spirochetes in the human bowel has been recognized since 1900, the term intestinal spirochetosis coined in 1967 by Harland. In humans, the bacteria responsible for intestinal spirochetosis commonly are *Brachyspira aalborgi* and *Brachyspira pilosicoli*, and can infect the colon (2.5% to 7%) or appendix (2% to 12%). A large investigation showed that intestinal spirochetosis of the vermiform appendix was significantly more frequent in...
patients with appendicitis-like symptoms but no histologically proven acute appendicitis (12.6%) than it was in patients with acute appendicitis (0.7%). In the infected bowel spirochetes are found attached by one end to the colonic epithelium, forming a dense “false brush border.” Prevalence tends to be low where living standards are high, and vice versa. The prevalence of spirochetes on rectal biopsy of hospitalized patients is noted to range from 1.9% to 6.9%. Whereas cases of intestinal spirochetosis frequently have been reported in developing countries, cases that are found in developed countries typically are the result of immunosuppression.

Chief complaints of affected individuals are watery diarrhea, weight loss, and crampy abdominal pain that is occasionally associated with rectal bleeding; however, confounding the diagnosis is the fact that many affected patients are asymptomatic. Such patients may present with unresolving intermittent diarrhea without cramping, but typically will also have weight loss.

**Pathophysiology and the Role of Immunosuppression**

The pathophysiology of intestinal spirochetosis remains unclear. However, an increased prevalence of intestinal spirochetosis—as many as 30% to 40% of cases—has been described in patients with HIV/AIDS. The frequency of intestinal spirochetes detected in the colonic mucosa has been variously reported as 1.9% to 10% in Western Europe, 20% in Greece, 30% in Chicago, 32.6% in Australian Aborigines, and up to 100% in certain West African states. Individuals infected with HIV and/or HCV are at particular risk as a result of immunosuppression, as well as are individuals who engage in sexual practices, such as anal intercourse, that may promote disease transmission.

Intestinal spirochetosis is transmitted via fecal-oral contact and colonization rates in the colon depend upon sanitation, diet, sexual practice, and immune function. Homosexual men with intestinal symptoms, such as cramping, diarrhea, and weight loss, often have an increased likelihood of the presence of spirochetes, frequently in association with *Neisseria gonorrhoeae*, and the rate of recurrence in this group is high. Independent association of spirochetosis with clinical or histologic findings have not been demonstrated.

**Diagnosis**

Because of its symptomatology, intestinal spirochetosis can be overlooked or mistaken for a number of other conditions. Differential diagnosis includes (but is not limited to) colon carcinoma, gastric ulcers, irritable bowel disorders, Zollinger-Ellison syndrome, giardiasis, hemorrhagic *Escherichia coli*, infectious colitis, and hemorrhoids.

Diffuse abdominal tenderness along with increased bowel sounds often are found on physical examination. On digital rectal examination blood is found on occasion. On laboratory investigation, findings are normal in most patients with spirochetosis. The gold standard for diagnosis is colonoscopic biopsy of the intestinal tissue and staining with Warthin-Starry stain. Stool culture has not demonstrated any significance in the diagnosis. Taking a proper patient history and performing colonoscopy and biopsy will aid in differentiation of these disorders.

**Treatment**

In most cases a conservative approach with no intervention can be followed. In some cases, depending on the severity of symptoms and clinical findings, a therapeutic trial can be attempted. Patients with proven invasion of spirochetes beyond the colonic surface epithelium are likely to respond to antibiotic treatment. A short course of metronidazole could be used for the treatment of these anaerobic spirochetes. However, physicians must be aware that therapeutic trials might fail to resolve the presenting symptom.

This patient was treated with metronidazole 500 mg 3 times per day for 14 days, and showed improvement.

**Conclusion**

Clinicians should be comprehensive in their workups and history taking, as rare diseases such as intestinal spirochetosis can be easily overlooked as a result of their common symptomatology. Colonoscopy with biopsy plays a vital role in the diagnosis of intestinal spirochetosis. Prognosis is favorable with medication.


Key Points

1. Intestinal spirochetosis is a rare disease that occurs as a result of fecal-oral contamination.
2. Intestinal spirochetosis usually occurs in immunocompromised patients, homosexual men, and HIV-infected individuals who are at high risk of contracting the disease as a result of immune deficiency and/or from anal intercourse.
3. Colonoscopy and biopsy of the colon are highly useful for diagnosis.

References