

# A Rare Case of Intestinal Spirochetosis in an Asymptomatic Immunocompetent Patient

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## INTRODUCTION :

Human Intestinal spirochetosis is defined as the presence of spirochetes attached to the surface of the intestinal mucosa. Intestinal spirochetes comprise a heterogeneous group of bacteria. In humans, *Brachyspira aalborgi* and *Brachyspira pilosicoli* predominate. Intestinal spirochetosis is primarily reported in developing countries and rare in places with high living standards. Immunocompromised patients and homosexuals are at higher risk for colonization and invasive human intestinal spirochetosis. Patients can be asymptomatic or present with diarrhea, abdominal pain, hematochezia, crypt inflammation, and lower GI bleeding. We present a rare case of asymptomatic human intestinal spirochetosis with no risk factors.

## CASE DESCRIPTION

A 66-year-old Caucasian heterosexual male with a past medical history of nicotine use disorder, alcohol dependence, and hypertension was referred to the gastroenterology clinic for persistently elevated liver enzymes and abnormal abdominal imaging results. He denied having any gastrointestinal or systemic symptoms except occasional diarrhea and was sexually active with only one female partner for the last 40 years. Computed tomography (CT) scan of the abdomen and pelvis showed sigmoid diverticulosis with sigmoid wall thickening and a fistulous communication between the sigmoid colon and bladder dome.

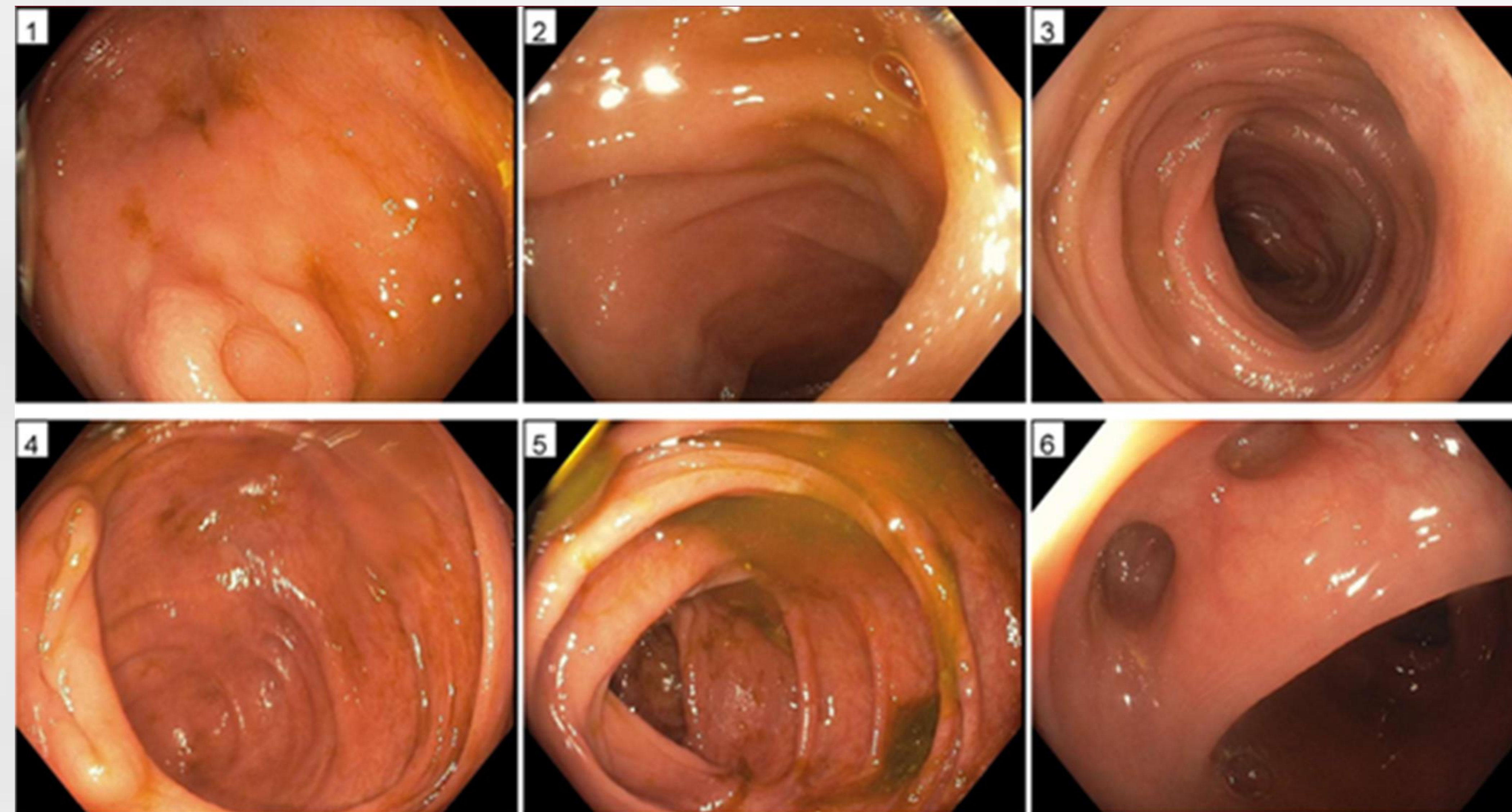


Figure 1: Colonoscopy showing edematous mucosa and diverticulosis

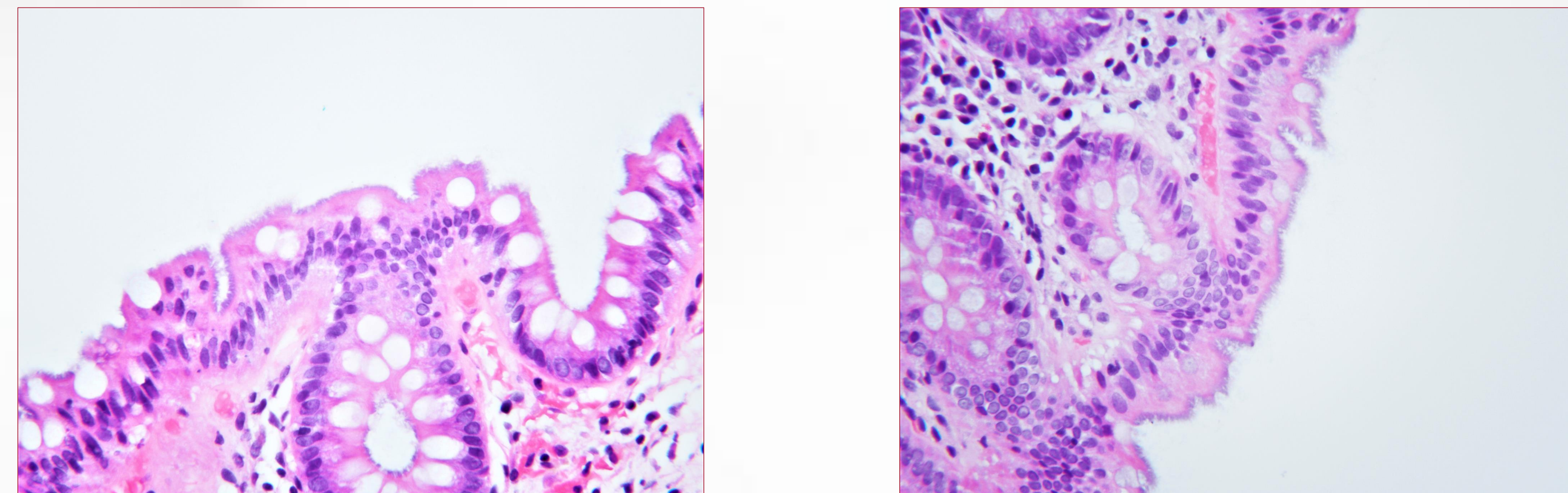


Figure 2a & 2b: Histologic sections show colonic mucosa with benign crypts and glands, and a densely basophilic surface epithelium layer completely occupied with spirochetes, imparting a fuzzy, irregular appearance on H&E.

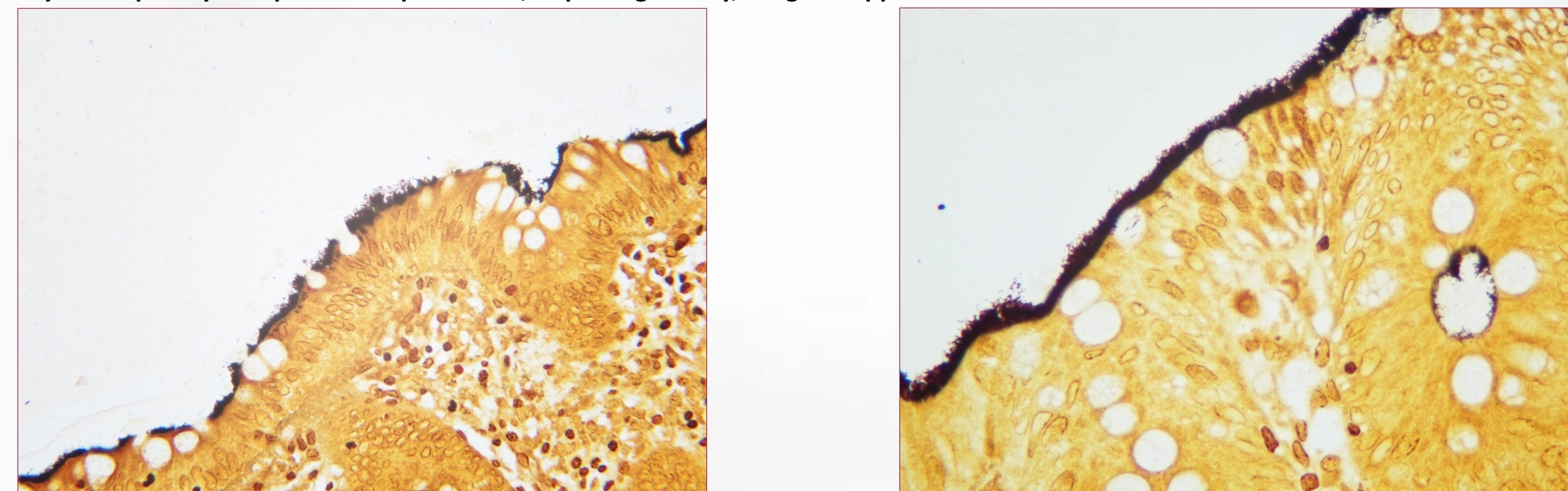


Figure 3a & 3b: Warthin-Starry, a silver-nitrate stain, reacts with this same surface epithelium, highlighting the population of spirochetes, including individual organisms freely floating within a crypt just deep to the surface

An active open fistula between the bowel and bladder was considered. CT scan also revealed hepatic steatosis and irregular fat stranding. Further evaluation with colonoscopy showed a total of 2 large polyps and multiple sigmoid diverticula but no evidence of fistulous communication.

Histopathology of the biopsies showed hyperplastic and adenomatous polyps and spirochetes. Warthin-Starry stain was used for further clarification, which was positive for *Brachyspira* spirochetes from all the tissue specimens. Given the histopathological findings, he was referred to an infectious disease specialist. Additional labs, including HIV and Rapid Plasma Regain (RPR), were negative. The decision was made to monitor the clinical condition and avoid antibiotics for the time being, given the absence of symptoms and concurrent alcohol use. A surgical evaluation was planned to look into a possible colo-vesical fistula, but the patient was lost to follow-up.

## DISCUSSION

Intestinal spirochetosis is known to cause havoc in veterinary medicine, especially in the swine population (Our patient lived in a trailer park and worked with goats, chickens, dogs, and cats). Intestinal spirochetosis in humans and its clinical significance in an asymptomatic immunocompetent patient is poorly understood. Antibiotics are not recommended unless the patient is symptomatic. If recommended, 10 days of metronidazole is the choice of treatment.