Intestinal spirochetosis: a “fuzzy” entity

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The presence of spirochetes in the human bowel has been recognized for over a century. Harland in 1967 described spirochetes on electron microscopy of rectal biopsies in a man with chronic diarrhea, and coined the term intestinal spirochetosis (IS) [1]. We report two cases of IS followed by review of literature.

A 23-year-old male homosexual presented with diarrhea for 9 months but no blood. The routine hematology, biochemistry and inflammatory markers were normal. A rigid sigmoidoscopy showed normal mucosa. The biopsies revealed mucosa covered with fuzzy brush border, 2-3 μm thick and staining blue with hematoxylin (Fig. 1). His symptoms improved with a course of metronidazole.

A 16-year-old girl presented with sudden onset pain, fever, vomiting associated with tenderness and guarding in right iliac fossa. The white cell count was 12800/mm³ (normal 4-11,000) and a C-reactive protein of 36 mg/dL (normal less than 6). She underwent laparoscopic appendicectomy. The resected specimen showed inflamed appendix with neutrophilic infiltrates. The mucosa was covered with hematoxylin-stained fuzzy border.

IS is a well-recognized entity. Prevalence rates are highly variable but in general, the rates are inversely related to standards of living. Incidence varies throughout the world from 2-10% in Western Europe to 30% in Chicago to nearly 100% in western Africa [2]. It is also more common in homosexuals and HIV-infected patients and prevalence of up to 54% has been observed in homosexual men [3].

Human IS is mainly caused by two species of spirochetes named Brachyspira aalborgi (B. aalborgi) and Brachyspira pilosicoli.

The clinical presentation in humans varies from being asymptomatic to common symptoms of abdominal pain (46%), diarrhea (51%), alternating diarrhea and constipation (13%) and rectal bleeding [4]. Abdominal pain can mimic acute appendicitis. The invasive disease is very rare unless the patient is immunocompromised [3]. The diagnosis of IS is by histological examination of the biopsy specimens. The characteristic appearance of a dense basophilic band, 2-3 μm thick, along the colonic surface is diagnostic. The organisms can be demonstrated by electron microscopy. It is difficult to culture the organisms due to fastidious and slow growth, especially B. aalborgi [5].

IS can involve the entire colon, appendix and even terminal ileum. In a large study spirochetes were found in 12.3% of appendices removed from patients clinically suspected to have acute appendicitis but whose appendices were histologically normal. However, only 0.7% with histologically confirmed appendicitis did show spirochetes in their appendices (P<0.05) [6]. Our second case belongs to this group.

The clinical importance of IS remains unclear and controversial. Symptoms do not seem to correlate with the extent of colonic involvement or even clearance or persistence of the organisms. There is inadequacy of evidence based information regarding this clinical entity. The management consensus seems to lean towards a ‘wait and watch’ approach with the antibiotic treatment reserved for patients with persistent symptoms without other demonstrable pathology, especially in high-risk groups.

References

2 S. Manjunath, A. Thompson


