

IMPRINT CYTOLOGY OF HUMAN INTESTINAL SPIROCHETOSIS

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Background: Human intestinal spirochetosis is a colorectal infectious disease caused by two *Brachyspira* species. Its diagnosis is established by histology, culture, and polymerase chain reaction, but the value of cytologic examination in routine practice remains unclear. **Design:** Imprint cytology of biopsy specimens was examined for cytologic features specific to human intestinal spirochetosis. Specimens were obtained from 65 colorectal regions (1-3 regions from each case) in 25 ultrastructurally and/or genetically confirmed human intestinal spirochetosis cases (all men, 30-53 years old; 20 with *B. aalborgi*, 3 with *B. pilosicoli*, 2 with both genotypes). **Results:** In cytologic specimens, spirochetes tended to be floating freely within the mucus and intestinal fluid, while the “fringe formation” of spirochetes typically observed in histologic specimens was indistinct in cytologic specimens. Spirochetes were identified in 58 regions (89.2%)

and 23 cases (92.0%) by cytology, against in 50 regions (76.9%) and 22 cases (88.0%) by histology (no significant differences). In 6/8 regions exhibiting positive cytology and negative histology, *B. pilosicoli* was present within the mucus. **Conclusions:** Cytologic examination would be useful for the routine identification of human intestinal spirochetosis, especially if *B. pilosicoli* is involved. Further, we suggest the existence of differences in biological behavior (attaching to the epithelium or floating freely in the mucus) between these spirochetes.