Published in final edited form as:

Clin Gastroenterol Hepatol. 2013 November ; 11(11): A26. doi:10.1016/j.cgh.2013.01.018.

Capsule endoscopy in Whipple's disease

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A 70 year-old man with a history of seronegative rheumatoid arthritis and iron deficiency anemia was admitted to our hospital with severe diarrhea and weight loss. The diarrhea had been intermittent for two years and had started when he was treated with infliximab for arthritis. It had progressively increased in severity to 12-20 bowel movements per day on presentation despite loperamide and atropine/diphenoxylate. The patient had been admitted to the hospital several times previously for dehydration. His prior workup had included upper endoscopy, colonoscopy with biopsies, serum testing for celiac disease, stool studies for infection and malabsorption, and serum testing for carcinoid, HIV, and thyroid disorders, none of which explained his diarrhea. Computed tomography had shown enlarged mesenteric lymph nodes that were not suggestive of malignancy on positron emission tomography. He had been placed on iron supplementation with minimal improvement of anemia.

On admission to the hospital, the physical examination showed dry mucous membranes, poor skin turgor, and diffuse skin hyperpigmentation. Laboratory data were significant for a non-anion gap metabolic acidosis and a positive stool lactoferrin; the remainder of stool studies were within normal limits. Because of persistent iron deficiency anemia and an otherwise negative workup, a small bowel capsule endoscopy was performed that showed diffuse erythema, edema, erosions, and whitish plaques throughout the small bowel (Figure A). An enteroscopy performed using a pediatric colonoscope demonstrated similar mucosal characteristics (Figure B). Biopsies of the duodenum and jejunum showed villous atrophy and many periodic acid-Schiff positive foamy macrophages in the lamina propria (Figure C) consistent with Whipple's disease. The patient was treated with 2 weeks of intravenous ceftriaxone and will be continued on oral trimethoprim/sulfamethoxazole for at least one year. His diarrhea resolved within one month of initiation of antibiotics.

Whipple's disease is an infectious process caused by the bacteria *Tropheryma whipplei* and, in its late-onset form, is extremely rare; only around 30 cases are reported per year¹. Clinical presentation can include arthralgias, weight loss, abdominal pain, and diarrhea. Mucosal changes in Whipple's disease are most often present within the small bowel, which makes obtaining endoscopic images more difficult². Typical mucosal findings include edema,

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Disclosure:

Jason de Roulet, Medhat O. Hassan, and Linda C. Cummings have no conflicts of interest to disclose, whether financial, professional, or personal, regarding the preparation of this manuscript.

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whitish-yellow plaques, erythematous mucosa, and subepithelial hemorrhage³. However, mucosal findings can be subtle or discontinuous⁴, which can lead to a delay in diagnosis. We present images from both capsule endoscopy and enteroscopy demonstrating marked mucosal changes in addition to an image demonstrating the classic pathologic appearance of the disease.

Our patient's presentation fits many of the classic descriptions of Whipple's disease, including arthritis, skin hyperpigmentation, chronic diarrhea, and weight loss. Although it is rare, this diagnosis should always be considered in the workup of chronic diarrhea, especially if there is a history of immunomodulator use or immunosuppression.

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Figure.