#### ACCEPTED MANUSCRIPT

## Small-bowel video capsule endoscopic findings of Cronkhite-Canada syndrome

Timothée Wallenhorst,  $\mathrm{MD}^1$ , Mael Pagenault,  $\mathrm{MD}^1$ , Guillaume Bouguen,  $\mathrm{MD}^{1,2}$ ,  $\mathrm{PhD}^{1,2}$ , Laurent Siproudhis,  $\mathrm{MD}^1$ ,  $\mathrm{PhD}^{1,2}$ , Jean-François Bretagne,  $\mathrm{MD}$ ,  $\mathrm{PhD}^{1,2}$ .

- 1. Department of Hepato-Gastroenterology, University Hospital of Rennes, Pontchaillou, France
- 2. INSERM U991, University of Rennes 1, Rennes, France

### **Corresponding author:**

Dr. Timothée Wallenhorst, MD Service des Maladies de l'Appareil Digestif CHU Pontchaillou, 2 rue Henri le Guilloux 35033 Rennes Cedex, FRANCE

Phone: + 33 2 99 28 43 17 Fax: + 33 2 99 28 41 89

Email address: timothee.wallenhorst@chu-rennes.fr

#### **Conflicts of Interest and Source of Funding:**

TW, MP, GB, LS, JFB have no conflicts of interest to declare.

**Grant support:** This work did not receive any financial support.

**Author contributions:** TW and JFB edited the manuscript. MP, TW and JFB analyzed the video capsule endoscopic findings. All authors reviewed the paper and approved the final submitted draft.

Word count (excluding title page and figure): 200 words.

#### ACCEPTED MANUSCRIPT

Cronkhite-Canada syndrome (CCS) is a rare, non-familial disorder characterized by multiple gastrointestinal polyps and ectodermal changes. This article presents the first small-bowel video sequences of CCS using video capsule endoscopy (VCE).

A 78-year-old female patient was admitted to our department with severe protein-losing enteropathy, alopecia, and onychodystrophy of the finger and toenails. The patient had no significant personal or family medical history. Endoscopy revealed multiple polyps of the gastric, duodenal, and colonic mucosa. Histological findings included cystic dilatation and gland distortions with inflammatory infiltration and stromal edema. Endoscopic and histological findings, as well as clinical symptoms, were typical of CCS. Further investigation by VCE (PillCam 2, Given Imaging, Israel) revealed a highly abnormal endoscopic appearance that has not been reported for other small-bowel diseases.

In the duodenum and jejunum, we observed whitish, excessively elongated and arborescent villi resembling dense underwater seagrass in the intestinal lumen. We also observed several herpes-like polyps, a feature that has been reported once. These abnormalities decreased as the capsule progressed along the small bowel, with reduction or absence of folds related to mucosal atrophy in the distal ileum.

In addition to gastroscopy and colonoscopy, small-bowel VCE may be useful for assessing the efficacy of CCS treatments.

Figure 1: Jejunum video capsule endoscopy showing whitish, excessively elongated intestinal villi resembling dense underwater seagrass in the intestinal lumen.

# ACCEPTED MANUSCRIPT

