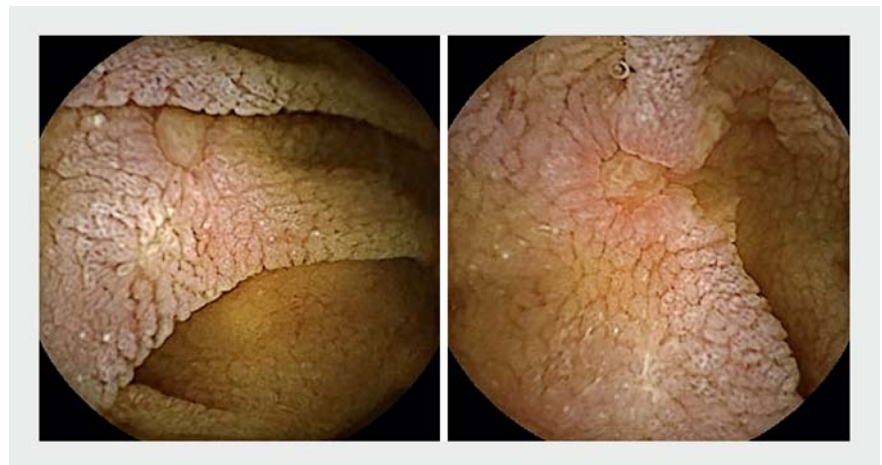
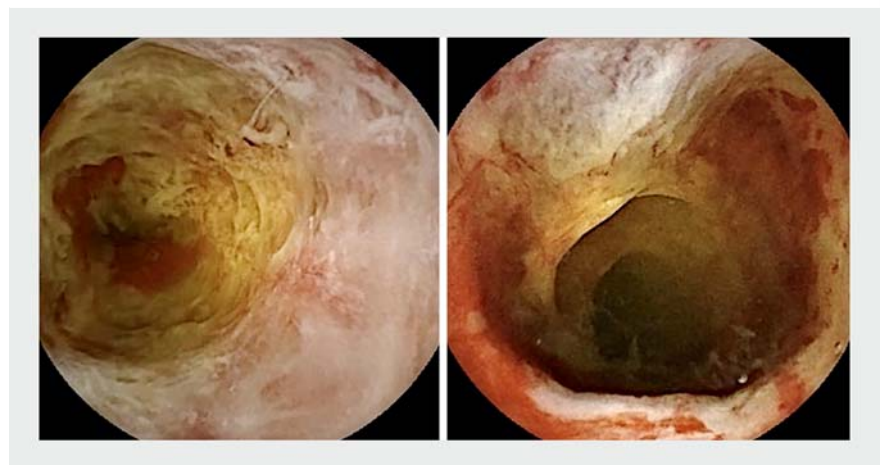


Type 2 refractory celiac disease on third-generation capsule endoscopy and enteroscopy: typical appearance of ulcerative jejunitis

We report the case of a 43-year-old woman with a medical history of active smoking who presented with abdominal pain that had appeared 4 months ago. The physical examination revealed periumbilical pain associated with weight loss. Laboratory studies revealed elevated inflammatory markers (C-reactive protein: 54 mg/dL) and hypoalbuminemia (22 g/L). Abdominal computed tomography (CT) and magnetic resonance enterography (MRE) showed a thickening of the small bowel at the junction between the jejunum and ileum, at 30 cm, suggesting Crohn's disease. Gastroscopy showed an appearance of duodenal villous atrophy, confirmed by Marsh stage 3c biopsy findings. Anti-transglutaminase antibodies were positive at 17 U/mL. ^{18}F -fluorodeoxyglucose (^{18}F -FDG) positron emission tomography (PET) detected a jejunoileal accumulation of ^{18}F -FDG, with a standard uptake value (SUV) at of 8.1. Small-bowel capsule endoscopy confirmed the appearance of villous atrophy with the presence of sporadic ulceration (► **Fig. 1**), then a completely ulcerated jejunoileal segment over several tens of centimeters, with necrotic pseudomembranous and hemorrhagic spots (► **Fig. 2**, ► **Video 1**). Biopsies of this ulcerated area were performed with double-balloon enteroscopy (► **Fig. 3**), histological examination revealing refractory type 2 celiac disease (RCD) characterized by an increased clonal population of abnormal intraepithelial lymphocytes (IEL). Abnormal IEL phenotype was described with disappearance of the classical markers such as CD4 or CD5 and the presence of NKp46 marker, but without any sign of high-grade lymphoma (► **Fig. 4**). Systemic corticosteroid therapy was initiated but did not improve the patient's symptoms. She developed an occlusive syndrome requiring surgical resection of the ulcerated jejunoileal segment (39 cm). The surgical follow-up was simple. The diagnosis of type 2 RCD without high-grade lymphoma was confirmed. Gluten-free diet and open-capsule budesonide treatment were initiated with close surveillance of the patient due to the high risk of progression to T-cell lymphoma.



► **Fig. 1** Small-bowel capsule endoscopy: villous atrophy with presence of ulceration.



► **Fig. 2** Small-bowel capsule endoscopy: ulcerated jejunoileal segment.

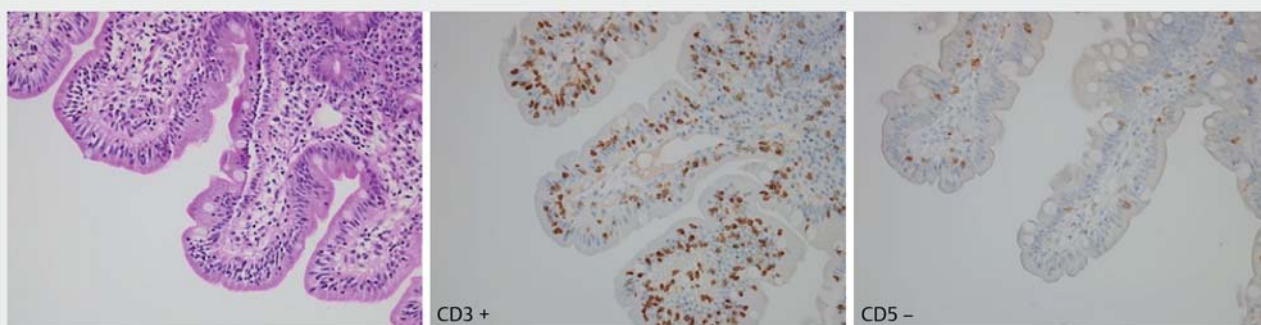
About 5% of patients with celiac disease do not respond to a gluten-free diet and are at risk of developing RCD. Type 2 RCD is characterized by infiltration of monoclonal intraepithelial T cells and is considered as a low-grade intraepithelial lymphoma with a high risk of progression

to aggressive T-cell lymphoma [1]. In this situation, imaging (CT, MRE, PET) is inadequate because it lacks sensitivity and specificity. Exploration of lesions in the small bowel is complex and can lead to a prejudicial delayed diagnosis. Small-bowel capsule endoscopy and enteroscopy are relevant tests to explore suspected refractory celiac disease [2–3].

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► **Fig. 3** Double-balloon enteroscopy: ulcerated jejunoileal segment.



► **Fig. 4** Increased clonal population of abnormal intraepithelial lymphocytes: CD3+/CD5-.



► **Video 1** Typical endoscopic appearance of ulcerative jejunitis secondary to refractory celiac disease type 2.



Competing interests

None

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