

Intestinal follicular lymphoma is uncommon, and its endoscopic appearance has seldom been described [1–4]. We report five patients with primary intestinal follicular lymphoma in whom the whole of the gastrointestinal tract were examined using esophagogastroduodenoscopy (EGD), colonoscopy, and double-balloon enteroscopy [5].

The clinical and endoscopic features of the five patients are summarized in Table 1. All the patients underwent EGD, colonoscopy, and double-balloon enteroscopy via antegrade and retrograde approaches (Fujinon-Toshiba ES Systems Co., Tokyo, Japan). Four patients (80%) had lesions in multiple sites in the gastrointestinal tract. The most frequent site was the jejunum, followed by the duodenum and the ileum. In three patients, EGD revealed multiple small, whitish nodules in duodenum, predominantly around the ampulla of Vater. On colonoscopy, one patient was found to have a superficially



Figure 1 Colonoscopic view showing a superficially elevated lesion composed of aggregates of small nodules in the rectum in patient 3.

elevated lesion with aggregates of small nodules in the rectum (Figure 1), in addition to the ileal lesions. Interestingly, this *Helicobacter pylori*-negative patient showed regression of both rectal and ileal lesions on follow-up colonoscopy 15 months after antibiotic treatment.

Double-balloon enteroscopy revealed multiple polypoid lesions resembling lymphomatous polyposis in long segments of the jejunum or ileum in four patients (80%) (Figure 2 a, b). The remaining patient also showed lymphomatous polyposis-like lesions in the ileum, but multiple biopsies failed to reveal lymphoma cells. Swollen Kerckring folds with mass formation was observed in three patients, and severe jejunal stenosis in two (Figure 2 c, d). In all the patients, a histologic diagnosis of grade 1 follicular lymphoma was made by endoscopic biopsy, with infiltration of neoplastic cells positive for CD20, CD79a, CD10, and BCL2 but negative for CD3, CD5, and cyclin D1.

A variety of endoscopic features of intestinal follicular lymphoma were observed. Lymphomatous polyposis is considered to be one of the most characteristic findings, and this can often be detected using double-balloon enteroscopy. Double-balloon enteroscopy is a valuable tool for

Table 1 Clinical and endoscopic features of five patients with primary intestinal follicular lymphoma

Patient	Age/ Sex	Symptoms	Stage	Sites involved	EGD findings	Colonoscopic findings	DBE findings	Treatment	Response to treatment	Clinical outcome
1	55/M	None	I	D	Multiple small nodules (D)	Normal	LP-like* (I)	Antibiotics †	Not evaluated	Alive with disease, 3 months
2	58/M	Abdominal pain, emesis	II <sub>2</sub>	J, I**	Normal	Normal	Stenosis, mass, fold swelling, LP (J)	Surgery plus R-CHOP	Complete remission	Alive without dis- ease, 12 months
3	60/F	None	I	J, I, R	Normal	Nodule aggre- gates (R), LP (I)	LP (J, I)	Antibiotics ‡	Partial remission	Alive with disease, 20 months
4	64/M	None	II <sub>1</sub>	D, J	Multiple small nodules (D)	Normal	Mass, fold swelling, LP (J)	R-CHOP	Partial remission	Alive with disease, 10 months
5	71/M	Abdominal pain, nausea	IV	D, J	Multiple small nodules (D)	Normal	Stenosis, mass, fold swelling, LP (J)	R-CHOP	Partial remission	Alive with disease, 6 months

EGD, esophagogastroduodenoscopy; DBE, double-balloon enteroscopy; LP, lymphomatous polyposis; R-CHOP, rituximab plus cyclophosphamide, doxorubicin, vincristine, and prednisolone.

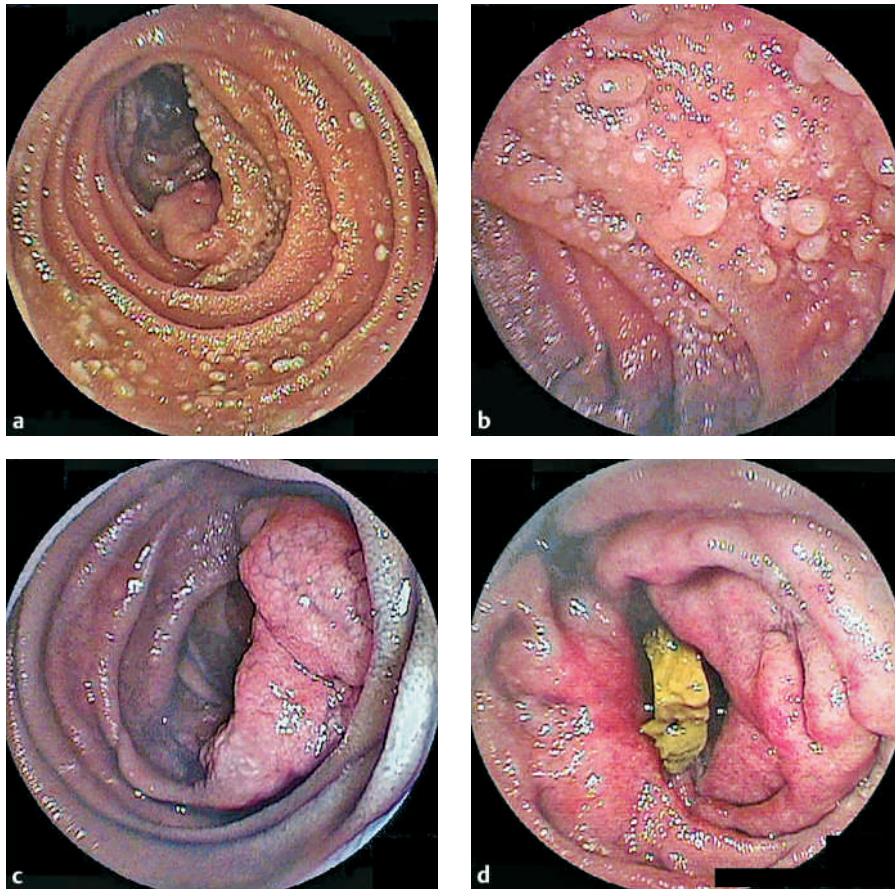
D, duodenum; I, ileum; J, jejunum; R, rectum.

\* Numerous small polypoid lesions were observed but biopsies failed to reveal lymphoma cells.

\*\* Detected by intraoperative enteroscopy.

† Lansoprazole plus amoxicillin and clarithromycin for 7 days.

‡ Rabeprazole plus amoxicillin, clarithromycin, and metronidazole for 14 days



**Figure 2** Double-balloon enteroscopic views of the jejunum in patients with intestinal follicular lymphoma. Numerous polypoid lesions of varying sizes, resembling lymphomatous polyposis, were seen, illustrated by images

from patient 4 (a) and patient 5 (b). Patient 5 also showed mass formation (c), and patient 2 had a severe jejunal stenosis due to mass formation with swelling of Kerckring folds (d).

the detection and accurate diagnosis of the small-intestinal lesions of this disease.

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