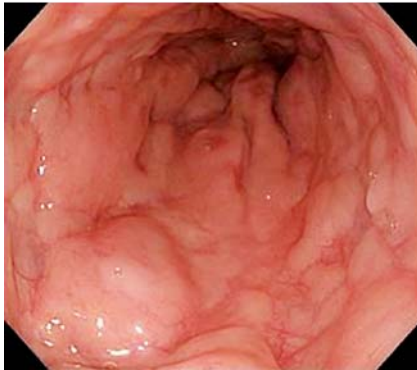
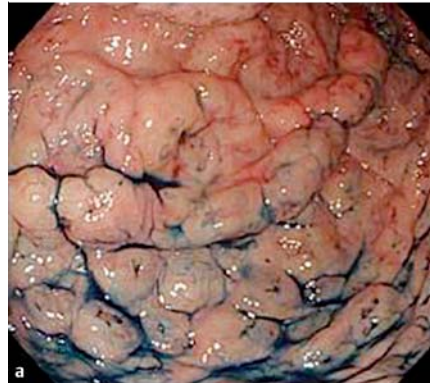


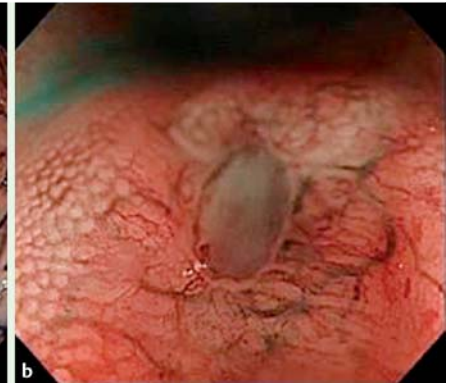
## Mantle cell lymphoma complicated by multiple widespread extranodal gastrointestinal lesions



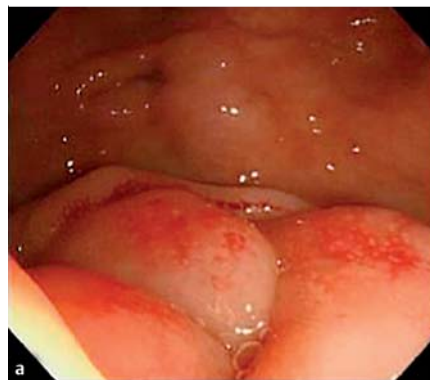
**Fig. 1** Upper gastrointestinal endoscopy in a 65-year-old man hospitalized with generalized lymphadenopathy showed multiple flat tuberos lesions in the middle to lower esophagus, diagnosed as multiple lymphomatous polyposis (MLP). Excavated lesions were also present on the apex of the esophagus.



**Fig. 2** **a** Multiple flat tuberos lesions in the middle great curvature to lower curvature of the stomach, and excavated lesions on the apex of the stomach, were diagnosed as multiple lymphomatous polyposis (MLP), similarly to the lesions in the esophagus. **b** Narrow-band imaging (NBI) with magnification showed microscopically dendritic abnormal vascular hyperplasia on the tuberos parts of intra-gastric MLP lesions.



A 65-year-old man was hospitalized in our department with generalized lymphadenopathy. He was diagnosed with mantle cell lymphoma (MCL) complicated by peripheral tumorigenesis and marrow infiltration in a biopsy of cervical lymph nodes. Upper gastrointestinal endoscopy showed multiple tuberos lesions in the lower esophagus (Fig. 1) and the great curvature of the stomach (Fig. 2a). These findings were diagnosed as multiple lymphomatous polyposis (MLP). Narrow-band imaging (NBI) with magnification showed microscopically dendritic abnormal vascular hyperplasia on tuberos parts of intra-gastric MLP lesions (Fig. 2b). Lower gastrointestinal endoscopy showed a tuberos lesion in the cecum (Fig. 3a) and multiple small polypoid lesions throughout the large intestine (Fig. 3b). Immunohistologic staining of biopsy tissues from the stomach (Fig. 4a–d) and large intestine (Fig. 5a–d) gave positive results for CD5, CD20, and cyclin D1 colocalized with nuclear staining. These findings permitted a definite diagnosis of gastrointestinal lesions of MCL. Treatment is planned with R-hyper CVAD/MA followed by high dose chemotherapy combined with autologous peripheral blood stem cell transplantation.



**Fig. 3** Lower gastrointestinal endoscopy showed: **a** lesions resembling submucosal tumors with few epithelial changes in the cecum; **b** multiple small polypoid lesions present throughout the large intestine.

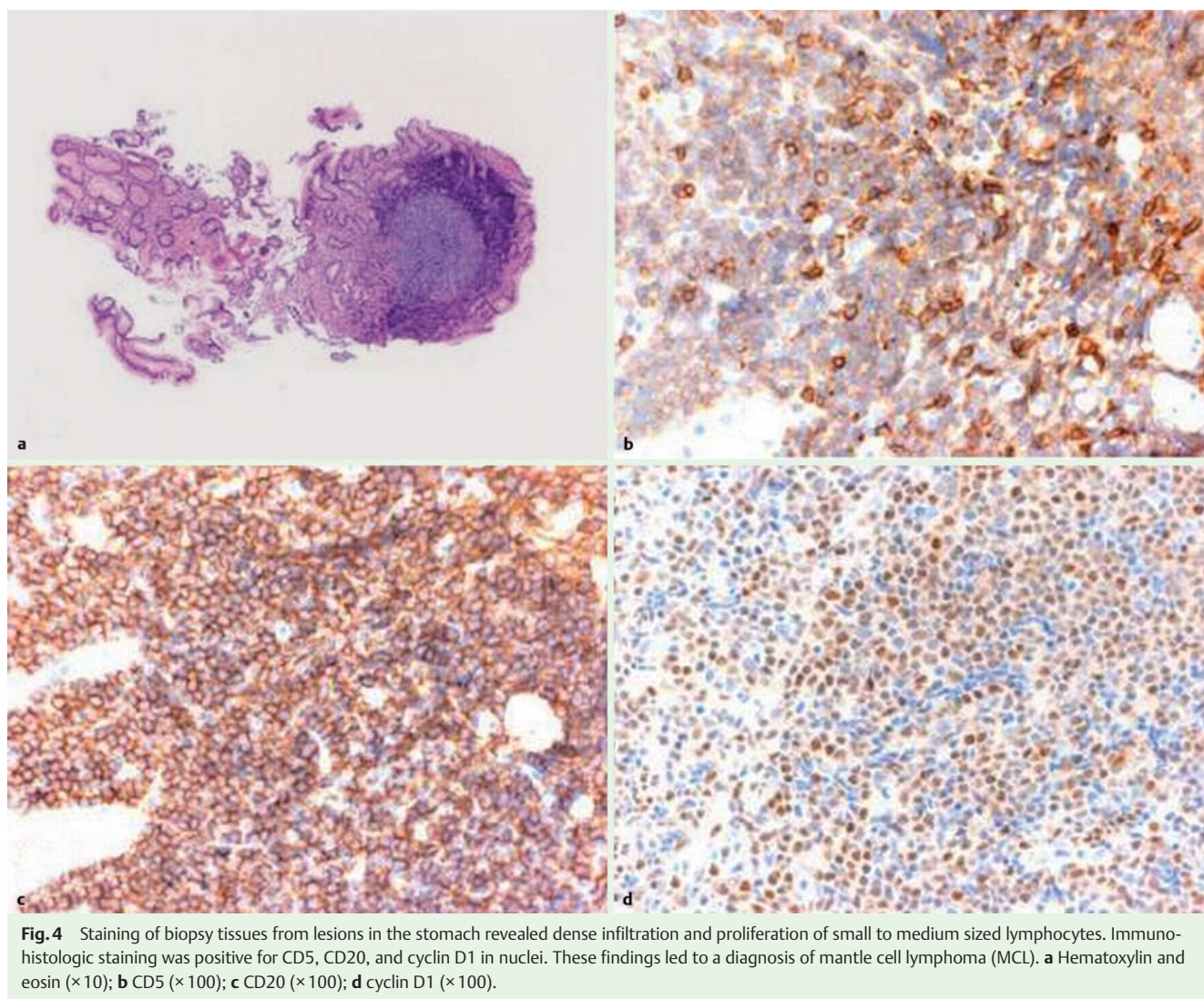


MCL is a B-cell lymphoma that accounts for 5%–10% of cases of malignant lymphoma, and 75% of cases of MCL at diagnosis are at an advanced stage (III or IV) [1]. Extranodal infiltration is found most frequently in the gastrointestinal tract, but 5.7% of cases show extranodal infiltration in esophageal lesions [2]. There are a few reports of narrow-band imaging with magnifying endoscopy for gastrointestinal lesions of MCL, and this technique has been described in a few cases of dendritic abnormal vascular hyperplasia [3]. High dose chemotherapy combined with autologous peripheral blood stem cell trans-

plantation after R-hyper CVAD/MA treatment is effective for advanced MCL [4]. A combination of rituximab and bendamustine as intensive chemotherapy may also be useful for cases that are difficult to treat [5].

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**Competing interests:** None



**Fig. 4** Staining of biopsy tissues from lesions in the stomach revealed dense infiltration and proliferation of small to medium sized lymphocytes. Immunohistologic staining was positive for CD5, CD20, and cyclin D1 in nuclei. These findings led to a diagnosis of mantle cell lymphoma (MCL). **a** Hematoxylin and eosin ( $\times 10$ ); **b** CD5 ( $\times 100$ ); **c** CD20 ( $\times 100$ ); **d** cyclin D1 ( $\times 100$ ).

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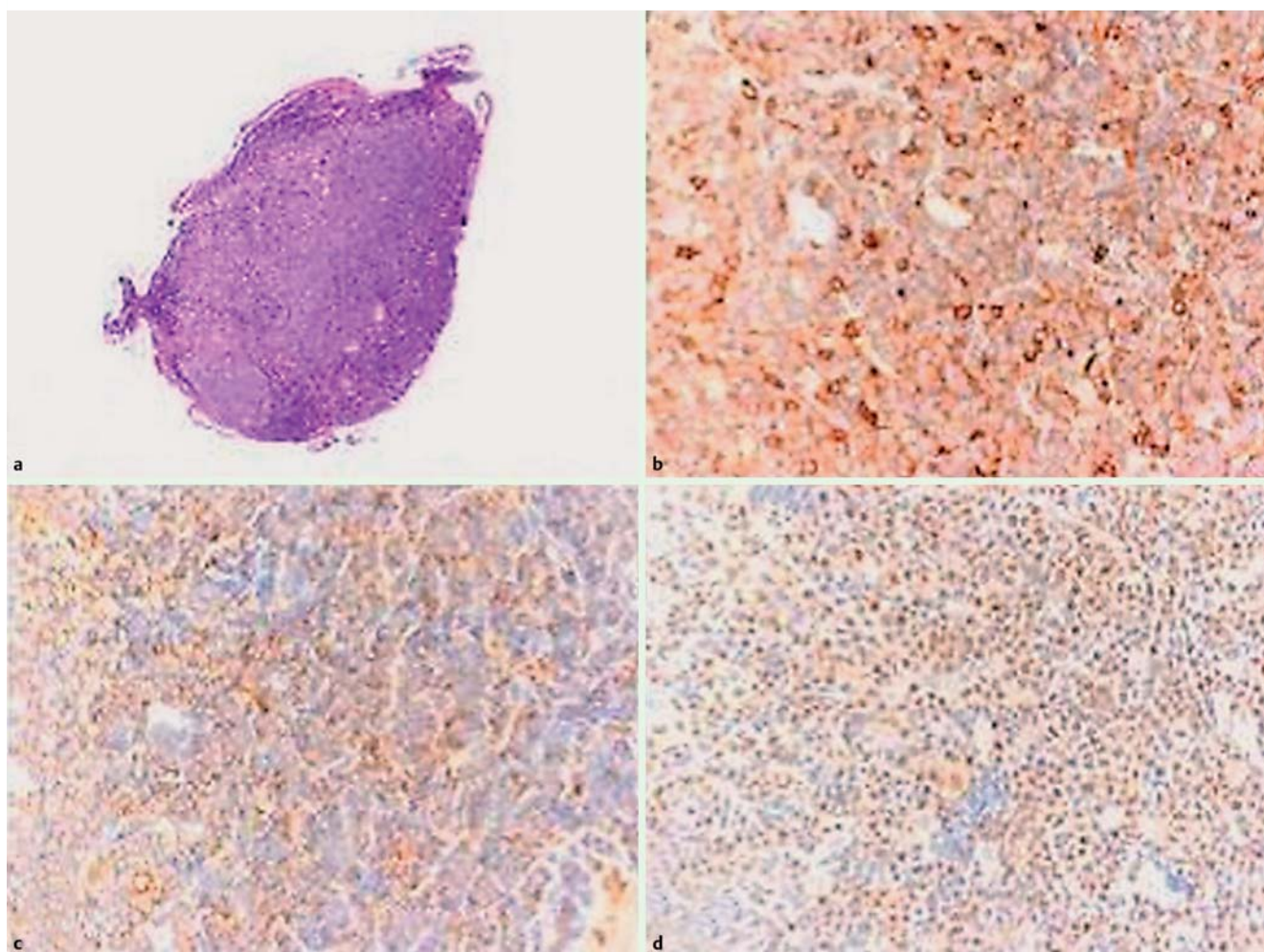
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• Fig. 5 see following page.





**Fig. 5** Staining of biopsy tissues from lesions in the large intestine resulted in a diagnosis of mantle cell lymphoma (MCL), similarly to the diagnosis of lesions in the stomach. **a** Hematoxylin and eosin ( $\times 10$ ); **b** CD5 ( $\times 100$ ); **c** CD20 ( $\times 100$ ); **d** cyclin D1 ( $\times 100$ ).