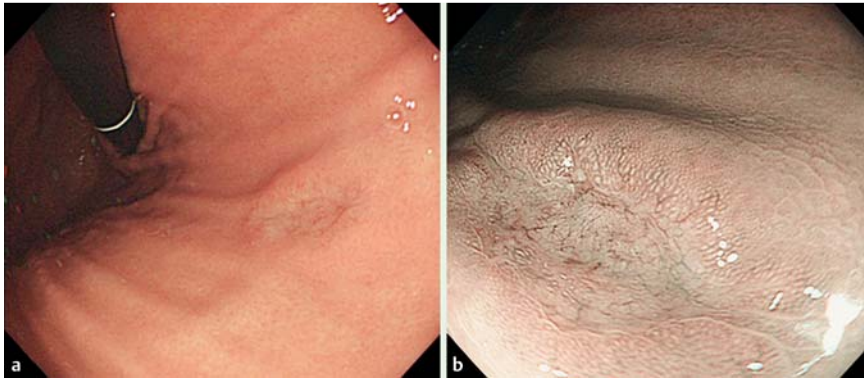
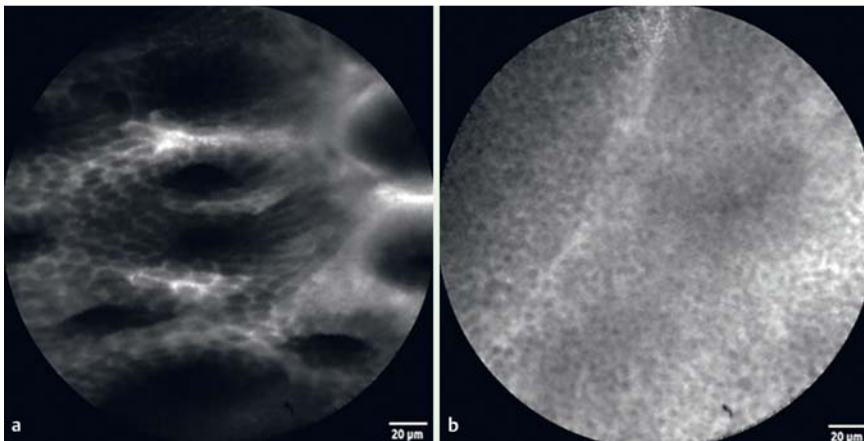


## Confocal laser endomicroscopic and magnifying narrow-band imaging findings of gastric mucosa-associated lymphoid tissue lymphoma



**Fig. 1** **a** Conventional endoscopic imaging reveals a discolored, depressed lesion in the lesser curvature of the middle part of the gastric body in a 71-year-old woman undergoing screening upper gastrointestinal endoscopy. **b** Magnifying endoscopy combined with narrow-band imaging reveals the absence of glandular structures and the presence of branching abnormal blood vessels.



**Fig. 2** Probe-based confocal laser endomicroscopic imaging. **a** Normal fundic glands in the mucosa around the lesion have regular round or oval foveolar lumina with homogeneous epithelial cells; these are visualized on dark images. **b** In the lesion, small cells, with a size of approximately 5  $\mu\text{m}$ , appear in a dense arrangement.

The endoscopic findings of gastric mucosa-associated lymphoid tissue (MALT) lymphoma are variable, making its diagnosis very difficult. We previously reported the usefulness of magnifying narrow-band imaging (NBI) for the diagnosis of gastric MALT lymphoma [1–3]. Here, we report our experience with the confocal laser endomicroscopic (CLE) imaging of gastric MALT lymphoma and the corresponding histopathological imaging. To our knowledge, this is the first such report in the world. The patient was a 71-year-old woman. Screening upper gastrointestinal endos-

copy performed at our hospital revealed a shallow, brownish, depressed lesion approximately 10 mm in diameter in the lesser curvature of the middle part of the gastric body (Fig. 1a). When the depressed lesion was observed with magnifying endoscopy and NBI, it tended to lack glandular structures compared with the surrounding mucosa, and abnormal blood vessels branching in a treelike pattern, which we have previously reported [1–3], were observed at the same site (Fig. 1b). Subsequently, fluorescein-aided probe-based confocal laser endoscopy (pCLE) was performed with the GastroFlex UHD

miniprobe (Cellvizio; Mauna Kea Technologies, Paris, France) [4]. First, pCLE images of the normal mucosa around the lesion were obtained to serve as a control; these showed regular round or oval crypts with homogeneous epithelial cells (Fig. 2a). Then, pCLE was used to observe the lesion; this showed an absence of glandular structures and small, dark cells in a dense arrangement (Fig. 2b).

Biopsy specimens of the lesion site exhibited a subepithelial nodular proliferation of small to medium-size centrocyte-like cells (Fig. 3a), which were immunohistochemically positive for CD20 and Bcl-2 and negative for CD3, CD10, cyclin D1, and Bcl-6 (Fig. 3b). Lymphoepithelial lesions were also observed (Fig. 3a), resulting in a pathological diagnosis of gastric MALT lymphoma. The size of the tumor cells on the histological sections was consistent with the size of the dark cells on pCLE imaging.

Based on the results of positron emission tomography and computed tomography (PET-CT) and bone marrow findings, stage II gastric MALT lymphoma was diagnosed.

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**Competing interests:** None

**Kouichi Nonaka<sup>1</sup>, Ken Ohata<sup>1</sup>, Shinichi Ban<sup>2</sup>, Maiko Takita<sup>1</sup>, Yohei Minato<sup>1</sup>, Nobuyuki Matsushashi<sup>1</sup>**

<sup>1</sup> Department of Gastroenterology, NTT Medical Center Tokyo, Tokyo, Japan

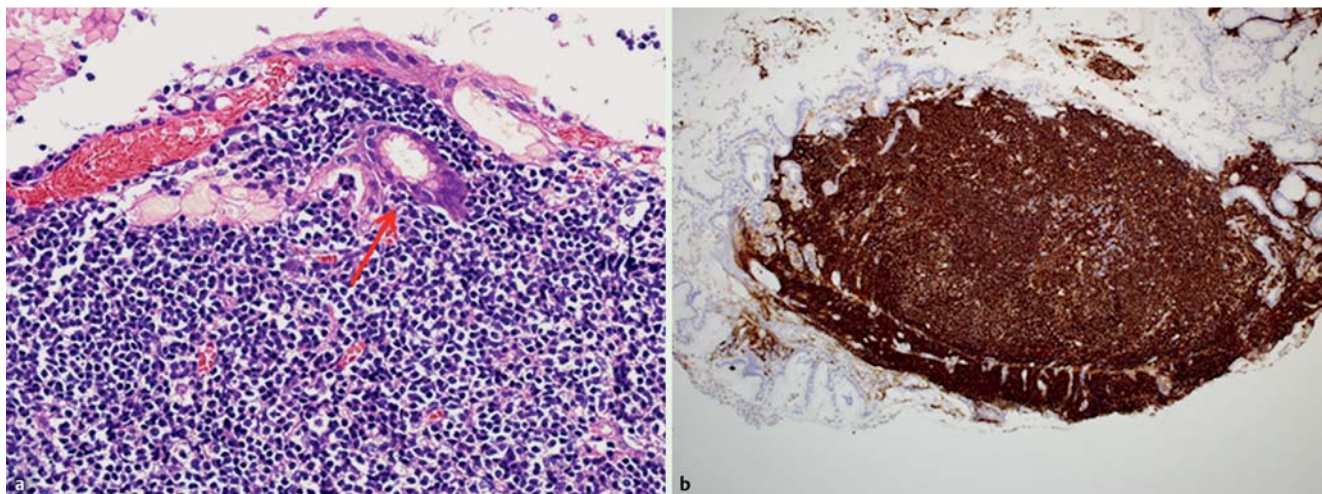
<sup>2</sup> Department of Pathology, Dokkyo Medical University Koshigaya Hospital, Saitama, Japan

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**Fig. 3** Histological findings in the biopsy specimens. **a** A section stained with hematoxylin and eosin exhibits a subepithelial nodular proliferation of small, atypical lymphoid cells. Lymphoepithelial lesions are also observed (red arrow; original magnification  $\times 400$ ). **b** On immunohistochemistry, the lesion is positive for CD20 (original magnification  $\times 100$ ).

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#### Corresponding author

**Ken Ohata, MD**  
 Department of Gastroenterology  
 NTT Medical Center Tokyo  
 5-9-22 Higashi-Gotanda Shinagawa-ku  
 Tokyo 141-8625  
 Japan  
 Fax: +81-3-3448-6541  
[ken.ohata1974@gmail.com](mailto:ken.ohata1974@gmail.com)