A case of early gastric cancer coexisting with a hyperplastic polyp

Kenji Ishido,1 Satoshi Tanabe,1 Shoko Hayashi,1 Katsuhiko Higuchi,1 Chikatoshi Katada,1 Akira Naruke,1 Wasaburo Koizumi,1 Tetsuo Mikami2

1Department of Gastroenterology, Kitasato University East Hospital
2Department of Pathology, Kitasato University East Hospital

A 52-year-old woman consulted a local physician because of epigastric pain. Upper gastrointestinal endoscopy showed a slightly elevated polyp, about 10 mm in diameter, in the anterior wall of the upper gastric body. The patient was therefore referred to the Department of Gastroenterology, Kitasato University East Hospital. Helicobacter pylori was negative, and there was no atrophy of the gastric mucosa. A reddish gastric polyp was seen among multiple fundic gland polyps. Narrow band imaging showed an irregular microvascular pattern on the surface of the gastric hyperplastic polyp. Biopsy revealed a Group 4 tumor, so early gastric cancer was suspected. Endoscopic submucosal dissection was performed, and the patient was uneventfully discharged from the hospital. There were no complications. Histopathological examination showed partial intermingling of gland ducts on the top of the hyperplastic polyp. Adenocarcinoma arising from a gastric hyperplastic polyp was diagnosed. Complete en bloc resection was performed in accordance with current guidelines. Subsequently, the patient was followed up on an outpatient basis, and there was no evidence of metastasis or recurrence.

Key words: early gastric cancer, hyperplastic polyp, H. pylori negative

Introduction

Gastric hyperplastic polyps are the most common protruding lesions in the stomach1 and can be histologically classified as foveolar epithelial type, fundic gland type, and mixed type. Most gastric hyperplastic polyps are non-neoplastic lesions. As a candidate for the cause of hyperplastic polyp, chronic gastritis due to Helicobacter pylori infection is considered to promote proliferation of the mucosal epithelium, leading to the development of hyperplastic polyps.2 Here, we describe a rare case of malignant transformation of a hyperplastic polyp arising from among multiple fundic gland polyps in an H. pylori-negative patient with no atrophy of the background gastric mucosa.

Case Report

A 52-year-old woman consulted a local physician because of epigastric pain. Upper gastrointestinal endoscopy showed a reddish slightly elevated polyp in the anterior wall of the upper gastric body. Biopsy revealed a Group 3 tumor. The patient was therefore referred to the Department of Gastroenterology of our hospital. Upper gastrointestinal endoscopy was performed in our department and showed no evidence of atrophy of the background gastric mucosa. Fundic gland polyps were sporadically seen, and a reddish protruding lesion about 10 mm in diameter was found in the anterior wall of the upper gastric body (Figure 1A). Magnifying endoscopy with narrow band imaging (NBI) showed an irregular microscopic pattern on part of the surface of the polyp. Biopsy of the same site revealed a Group 4 tumor (Figure 1B, C). The patient had a history of 1 uterine myoma. On blood tests, H. pylori IgG antibodies were negative in serum. There was no elevation of tumor markers or distinct evidence of lymph node metastasis or distant metastasis. Therefore, early gastric cancer was suspected. In accordance with current guidelines for the treatment of gastric cancer, endoscopic submucosal dissection was performed.3 The lesion was endoscopically resected en bloc. The patient was uneventfully discharged from the hospital with no complications.

Histopathological examination showed a gastric hyperplastic polyp 7 × 6 mm in diameter, consisting mainly of hyperplastic pyloric and fundic glands.

Received 29 November 2012, accepted 18 December 2012
Correspondence to: Kenji Ishido, Department of Gastroenterology, Kitasato University School of Medicine
2-1-1 Asamizodai, Minami-ku, Sagamihara, Kanagawa 252-0380, Japan
E-mail: k.ishido@kitasato-u.ac.jp

82
Irregularly fused, atypical gland ducts with prominent nucleoli and enlarged nuclei were found on the top of the polyp (Figure 2A, B). Immunostaining showed that p53 was diffusely positive. As for the Ki67 labeling index, 40% of tumor cells stained positively for Ki67 (Figure 2C, D). A well-differentiated tubular adenocarcinoma (tub1) arising in a hyperplastic gastric polyp was diagnosed (tumor diameters, 2 × 1 mm; superficial and protruding type [0-I] early gastric cancer, uls[-], tub1, intramucosal carcinoma with no evidence of lymphovascular invasion). The resection margins were negative. Complete en bloc resection was performed in accordance with current guidelines. The patient has been followed up on an outpatient basis for 6 months after the endoscopic resection with no evidence of metastasis or recurrence.

Discussion

The patient had a hyperplastic polyp that arose among multiple fundic gland polyps and became cancerous. The detection rate of hyperplastic polyps on conventional upper gastrointestinal endoscopy was 8.7%. As a possible cause of hyperplastic polyp, chronic gastritis due to H. pylori infection is considered to promote proliferation of the mucosal epithelium, leading to the development of hyperplastic polyps. The malignant transformation rate of hyperplastic polyps has been reported to be 2.1%. Cancer coexists in 1% to 3% of hyperplastic polyps with a diameter of 10 mm or greater and in 3% to 5% of hyperplastic polyps with a diameter of 20 mm or greater. The patient in the present case had no atrophy of the background gastric mucosa. Anti-H. pylori IgG antibodies were negative in serum. Fundic gland polyps were sporadically seen mainly in the gastric body. A hyperplastic polyp 7 mm in diameter, mainly consisting of hyperplastic pyloric glands and fundic glands, was found in the anterior wall of the upper gastric body. Early gastric cancer, histopathologically diagnosed

A. An image obtained by conventional upper gastrointestinal endoscopy showing scattered multiple fundic gland polyps with no atrophy of the underlying gastric mucosa. A reddish, clearly demarcated, protruding lesion was found in the anterior wall of the upper gastric body. Biopsy revealed a Group 4 tumor.

B. An image obtained by narrow band imaging (NBI) during upper gastrointestinal endoscopy.

C. An image obtained by NBI with magnifying upper gastrointestinal endoscopy showing an irregular microscopic pattern on the top of the polyp, characterized by dilated and tortuous microvessels of various calibers and abnormal shapes (within the frame □).
A histopathological image (hematoxylin and eosin staining, low magnification) showing a hyperplastic polyp associated with hyperplasia of the hyperplastic foveolar epithelium, pyloric glands, and fundic glands.

A. A histopathological image (hematoxylin and eosin staining, ×200) showing irregularly fused, mildly atypical gland ducts with prominent nucleoli and enlarged nuclei on the top of the polyp. A well-differentiated tubular adenocarcinoma (tub1) was diagnosed (within the frame □ in A).

C. A histopathological image (p53 staining, ×200) showing nuclei stained diffusely positive for p53.

D. A histopathological image (Ki67 MIB-1 staining, ×200), showing that 40% of tumor cells stained positive for Ki67.

Figure 2

as a well-differentiated tubular adenocarcinoma (tub1) was found on the tip of the polyp.

Endoscopic features associated with the malignant transformation of hyperplastic polyps that became cancerous include large granular structures or a depression on the surface of the polyp, associated with attached white mucus or friability. However, the patient in the present case had no distinct endoscopic findings. The incidence of differentiated carcinoma arising in H. pylori-negative non-atrophic gastric mucosa has been reported to range from 1.1% to 3.4%. The present case is therefore considered rare.

Magnifying endoscopy with NBI focuses on the surface structures and vascular structures of the mucosa. The extent of tumor spread is diagnosed on the basis of irregularly arranged pit patterns and the characteristics of microvascular networks, such as dilatation, tortuosity, irregular caliber, and heterogeneous structure. In particular, the extent of differentiated carcinomas can be diagnosed on the basis of features such as loss of regularly arranged subepithelial capillaries, the presence of irregular microvascular patterns, and the presence of a prominent demarcation line. Our patient did not show a distinctly disarranged pit pattern but did have dilated, tortuous microvessels on the surface of the polyp. Histological examination showed a differentiated adenocarcinoma at nearly the same site. In patients such as ours who have a tumorous lesion arising from among multiple polyps, magnifying endoscopy with NBI may be helpful for diagnosis, as well as for selecting the site to biopsy. This patient had an adenocarcinoma arising from a hyperplastic polyp coexisting with multiple fundic gland lesions.
polyps. Because polyps coexisting with multiple fundic gland polyps in \( H. \) \( pylori \)-negative gastric mucosa without atrophy may become cancerous, close follow-up by upper gastrointestinal endoscopy is recommended.

References