Papillary Adenocarcinoma Occurring in a Gastric Hyperplastic Polyp Observed by Magnifying Endoscopy and Treated with Endoscopic Mucosal Resection

Shoji Hirasaki, Hiromitsu Kanzaki, Kohei Fujita, Shuji Matsumura, Eiji Matsumoto, Eiichiro Yumoto and Seiyuu Suzuki

Abstract

The patient was a 75-year-old man. He had been diagnosed with gastric hyperplastic polyp 4 years previously. The color of the apex of this polyp was whitish. Magnifying endoscopy findings revealed disappearance of the mucosal microstructure with irregular branched capillaries at the top of the polyp. Endoscopic mucosal resection (EMR) was performed. Histological examination revealed that a part of the polyp surface was replaced with papillary adenocarcinoma. Diagnosis of papillary adenocarcinoma in a hyperplastic polyp with mucosal invasion was made. Magnifying endoscopy was useful for the detection of gastric cancer occurring in the hyperplastic polyp in the present case.

Key words: mucosal gastric cancer, gastric polyp, capillary vessels, malignant transformation

(Int Med 47: 949-952, 2008)
(DOI: 10.2169/internalmedicine.47.0833)

Introduction

Papillary gastric carcinoma (PGC) is a rare histological entity among gastric adenocarcinomas (1). Although gastric hyperplastic polyps are occasionally associated with gastric cancer (2-7), gastric hyperplastic polyps are rarely associated with PGC. Herein, we report a rare case of a Japanese man diagnosed with papillary adenocarcinoma occurring in a gastric hyperplastic polyp observed by magnifying endoscopy and treated with endoscopic mucosal resection (EMR).

Case Report

A 75-year-old man visited our hospital for a follow-up study of a gastric polyp. He had been diagnosed with a gastric hyperplastic polyp 4 years previously. His body temperature was 36.6°C, blood pressure was 116/72 mmHg, and radial pulse rate was 64 beats/min and regular. He had neither anemia nor jaundice. Neurological examination revealed no abnormal findings and there was no lymphadenopathy.

The patient was a 75-year-old man. He had been diagnosed with gastric hyperplastic polyp 4 years previously. The color of the apex of this polyp was whitish. Magnifying endoscopy findings revealed disappearance of the mucosal microstructure with irregular branched capillaries at the top of the polyp. Endoscopic mucosal resection (EMR) was performed. Histological examination revealed that a part of the polyp surface was replaced with papillary adenocarcinoma. Diagnosis of papillary adenocarcinoma in a hyperplastic polyp with mucosal invasion was made. Magnifying endoscopy was useful for the detection of gastric cancer occurring in the hyperplastic polyp in the present case.

Key words: mucosal gastric cancer, gastric polyp, capillary vessels, malignant transformation

(Int Med 47: 949-952, 2008)
(DOI: 10.2169/internalmedicine.47.0833)
specimen revealed that a part of the polyp surface was replaced with cancerous tissue including papillary structures (Fig. 3B) and the tumor was surrounded by the tissue of the hyperplastic polyp with branching or cystically dilated foveolae (Fig. 3C). The cancerous lesion was limited to the mucosal layer. The protruding lesion was diagnosed as papillary adenocarcinoma occurring in a gastric hyperplastic polyp with mucosal invasion. No blood vessel invasion or lymphatic vessel invasion was seen. The post-EMR course was uneventful. He has been under close periodic observation, and there is no evidence of disease 10 months after EMR.

Discussion

This case involved the unusual association of a gastric hyperplastic polyp and PGC. The histological features in this case fulfilled the criteria of Nakamura et al (8) for the malignant transformation of hyperplastic polyps: 1) coexistence of benign and malignant parts in the same polyp; 2) existence of sufficient evidence that the benign area had previously been a benign polyp; and 3) existence of sufficient cellular and structural atypia in the malignant area to be diagnosed as cancer.

In studies of gastric polyps, we found that hyperplastic polyps were the most common; nearly 85-91% of all polyps were hyperplastic polyps (7, 9). In another report, the incidence of gastric hyperplastic polyps was reported to be 28.3% in one series of 5515 gastric polyps by Stolte et al (10). As gastric hyperplastic polyps are common, we should identify the relationship between gastric hyperplastic polyps and gastric cancer. It is generally acknowledged that the natural course of hyperplastic polyps does not include transformation to carcinoma, although hyperplastic polyps are occasionally associated with gastric cancer (6-8). The reported incidence of gastric hyperplastic polyp with focal cancer was 0.5-7.1% with an average of about 2.1% (2, 4, 11). Hattori et al (12) studied 67 hyperplastic polyps and reported that carcinomas were seen in 3 polyps (4.5%). The malignant transformation of a hyperplastic polyp is considered to relate to the size and macroscopic type; as the polyp grows larger and becomes semipedunculated or pedunculated, adenomatous or dysplastic foci appear first, followed by the cancerous lesion (2, 6). Most adenocarcinomas found within hyperplastic polyps are the differentiated type. Only a few cases of signet ring cell carcinoma occurring in gastric...
hyperplastic polyps have been reported (4, 6, 7). A MEDLINE search of the literature (1970-2007) revealed no reports describing a case of gastric hyperplastic polyps associated with papillary adenocarcinoma. Yasuda et al reported that PGC is characterized by advanced patient age, proximal tumor location, frequent liver metastasis, and significant lower overall survival rate compared with non-papillary gastric carcinoma (1). Thus, PGC should be discovered at an early stage and treated immediately for a good result. In the present case, the PGC was removed completely by EMR and he did not require additional surgery because the depth of the tumor was limited to the mucosal layer and no blood vessel invasion nor lymphatic vessel invasion was seen.

There are no reports describing the magnifying endoscopy findings of the papillary adenocarcinoma occurring in a gastric hyperplastic polyp. Tajiri et al (13) reported that a relatively coarse and irregular mucosal pattern and long tortuous capillary vessels were seen in the elevated type of early PGC with magnifying endoscopy. Tobita (14) described that branching minute vessels with irregular calibers or spiral vessels with irregular calibers were found frequently in undifferentiated depressed type gastric cancer. In the present case, disappearance of the mucosal microstructure with irregular branched capillaries was observed with magnifying endoscopy. Thus, we suspected the association of gastric cancer with the hyperplastic polyp in the present case, although we could not definitely conclude the lesion to be differentiated type or undifferentiated type carcinoma based on endoscopic findings. We speculated that endoscopic diagnosis of minute gastric cancer occurring in a gastric hyperplastic polyp by surface observation would be difficult (7); however, diagnosis of the association of hyperplastic polyp and gastric cancer could occasionally be made on the basis of color difference or a mucosal structure pattern by the usual endoscopic examination or magnifying endoscopy, as in the present case. Tajiri et al (13) reported that the mucosal patterns and the features of capillary vessels identified with the magnifying endoscope correlated well with the pathological diagnosis, and he claimed that magnifying endoscopy was useful in predicting the histological diagnosis of gastric cancer during routine endoscopic procedures. Other several reports also proved that magnifying endoscopy was useful for the diagnosis of gastric cancer (15, 16). However, the study of magnifying endoscopic finding of gastric cancer in the hyperplastic polyp has not been sufficiently evaluated. Further studies on the endoscopic findings of gastric cancer occurring in gastric hyperplastic polyp observed by magnifying endoscopy are most certainly necessary in the future.

In conclusion, we reported an extremely rare case of PGC occurring in a gastric hyperplastic polyp. This case emphasizes that gastric hyperplastic polyp may be associated with gastric cancer and periodic follow-up endoscopy and careful
observation are necessary for gastric hyperplastic polyp if the size increases. Magnifying endoscopy was useful for the
detection of gastric cancer occurring in the hyperplastic polyp in the present case.

References