

CASE REPORT

## Minute signet ring cell carcinoma occurring in gastric hyperplastic polyp

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### Abstract

We describe a 45-year-old woman with minute signet ring cell carcinoma occurring in a gastric hyperplastic polyp. A biopsy specimen obtained from the gastric hyperplastic polyp revealed signet ring cell carcinoma. Endoscopic mucosal resection (EMR) was performed to confirm the diagnosis. Histological examination of the EMR specimen revealed focal signet ring cell carcinoma in the hyperplastic polyp. There are few cases of gastric hyperplastic polyp associated with signet ring cell carcinoma.

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**Key words:** Minute gastric cancer; Signet ring cell; Endoscopic mucosal resection

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### INTRODUCTION

Patients with gastric hyperplastic polyps may present with anemia, abdominal pain or gastric outlet obstruction<sup>[1,2]</sup>; therefore, most endoscopists agree that large gastric polyps or polyps associated with complications should be removed endoscopically or surgically. On the other hand, signet ring cell carcinoma rarely occurs in gastric hyperplastic polyps; however, no standardized therapy for such cases has been established. Herein, we report a rare case of a Japanese woman diagnosed with minute signet ring cell carcinoma in a gastric hyperplastic polyp and treated with endoscopic mucosal resection (EMR).

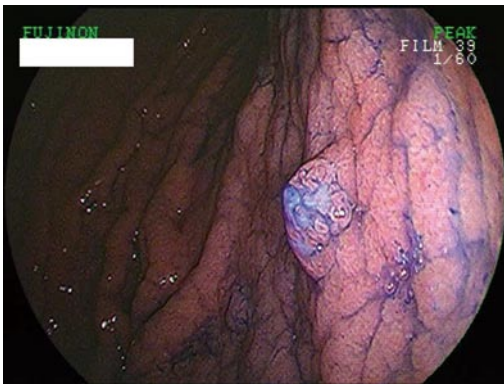
### CASE REPORT

A 45-year-old woman visited our hospital for a follow-up study of a gastric polyp. She had been diagnosed with gastric hyperplastic polyp on the posterior wall of the middle third area 5 years previously. Her body temperature was 36.4°C, blood pressure was 126/78 mmHg, and radial pulse rate was 66 beats/min and regular. She had neither anemia nor jaundice. A neurological examination revealed no abnormal findings and there was no lymphadenopathy. No specific family history was identified. Routine hematological examination and biochemical tests were within normal limits. Serum anti-*H. pylori* immunoglobulin G (IgG) antibody was positive. Endoscopic examination of the upper digestive tract revealed a small gastric hyperplastic polyp in the posterior wall of the gastric body (Fig. 1). The first biopsy specimen obtained from the polyp showed signet ring cell carcinoma. However, the biopsy specimen obtained repeatedly (three times) from the lesion revealed hyperplastic foveolar epithelium. Thus, the definite diagnosis could not be made. The patient underwent an EMR for histological confirmation. The protruding lesion, 6 × 5 mm in size, was resected completely with a safe lateral and vertical margin (Fig. 2). Histological examination showed neoplastic cells with signet ring features surrounded by the tissue of the hyperplastic polyp (Fig. 2). The protruding lesion was diagnosed as minute signet ring cell carcinoma in a hyperplastic polyp with mucosal invasion, ly0, and v0.

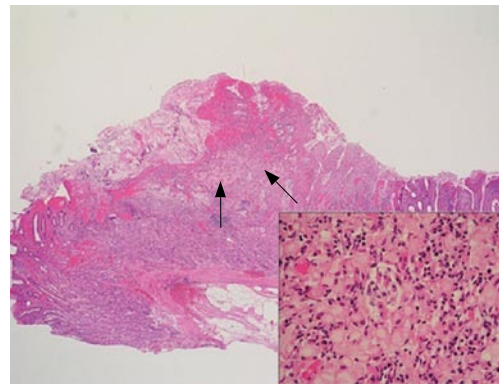
### DISCUSSION

This case involved the unusual association of a gastric hyperplastic polyp and focal signet ring cell carcinoma. Histological features in this case fulfilled the criteria of Nakamura *et al*<sup>[3]</sup> 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 existence of sufficient cellular and structural atypia in the malignant area to be diagnosed as cancer.

The relationship between gastric hyperplastic polyp and gastric cancer remains unknown. In a study of gastric polyps<sup>[2,4]</sup> we found that hyperplastic polyps are the most common; nearly 85%-91% of all polyps were hyperplastic polyps. 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*<sup>[5]</sup>. As gastric



**Figure 1** Endoscopic appearance of the gastric hyperplastic polyp in the posterior wall of the gastric body.



**Figure 2** The resected specimen obtained by endoscopic mucosal resection showing localized neoplastic cells with signet ring features limited to the mucosal layer (arrows) (HE,  $\times 10$ ,  $\times 100$ ).

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 occasionally associate with gastric cancer<sup>[6-8]</sup>. In these reports, most hyperplastic polyps harboring cancer were larger than 1 cm in size<sup>[6-8]</sup>. 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. Most adenocarcinomas found within hyperplastic polyps are the differentiated type. Few cases of signet ring cell carcinoma occurring in gastric hyperplastic polyps have been reported<sup>[4,9]</sup>.

In the present case, the hyperplastic polyp, 6 mm in diameter, was associated with focal signet ring cell carcinoma and was diagnosed by endoscopic biopsy by chance. However, we could not locate the cancer in the polyp by careful observation with endoscopy. Thus, association of hyperplastic polyp and gastric cancer should generally be taken into consideration when endoscopists detect gastric hyperplastic polyps. Endoscopists should aggressively obtain biopsy specimens from hyperplastic polyps even if they are small.

In conclusion, we report the case of a woman diagnosed with minute signet ring cell carcinoma in a hyperplastic gastric polyp. This case emphasizes that small gastric hyperplastic polyp may be associated with gastric

cancer, and periodic follow-up endoscopy and careful observation are necessary when treating patients with gastric hyperplastic polyp, even when it is less than 1 cm.

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